



VOL. XVI, NO. 2, JUNE 1971

OCEANUS



C. RÖNNE

COLUMBUS O'DONNELL ISELIN

1904 — 1971

THROUGH his skillful efforts and foresightedness, the Woods Hole Oceanographic Institution became one of the world's leading places in ocean research, making significant contributions to the knowledge of the seas, the welfare of the nation in peace and war, and to the world at large through international investigations and free publication of its findings.

General Assistant to the Director and Master of the R.V. 'Atlantis' 1930-1932. Physical Oceanographer 1932-1940. Member of the Corporation and Trustee 1936-1971. Director 1930-1940 and 1956-1958. Henry Bryant Bigelow Oceanographer 1958-1971.

COVER BY 

Noel B. McLean
Chairman, Board of Trustees
Paul M. Fye
President and Director
Arthur E. Maxwell
Provost
Bostwick H. Ketchum
Associate Director

Some Quotes

Vol. XVI, No. 2, June 1971

"Man is a land animal and relatively few of us feel at home or in sympathy with the sea. The sea is an obstacle and to be combatted. One remains on it for as short a time as possible. Scientists are no exception. They too get sea-sick and enjoy their firesides."

"The success of any expedition is always proportional to the congeniality of its personnel." (log of the schooner 'Chance')

"Another aspect of oceanography which is attracting considerable interest at present is the circulation and dispersion of inshore waters from the standpoint of both pollution and their ability to absorb industrial wastes. It is clear that in the vicinity of the major coastal cities the limit of the capacity of the local waters to absorb waste products is being reached and that very little planning or thought has gone into the problem. More and more, the engineers and the responsible government agencies are turning to oceanography to find out what is known about the inshore circulation, and the chemistry and bacteriology of the waters."

Memorandum to Dr. A. N. Richards and Dr. Detlev W. Bronk.

Sept. 1, 1948.

He wrote extremely well in a fine style in a fine hand, on long sheets of paper. That he never learned to spell did not influence his sense of grammar.

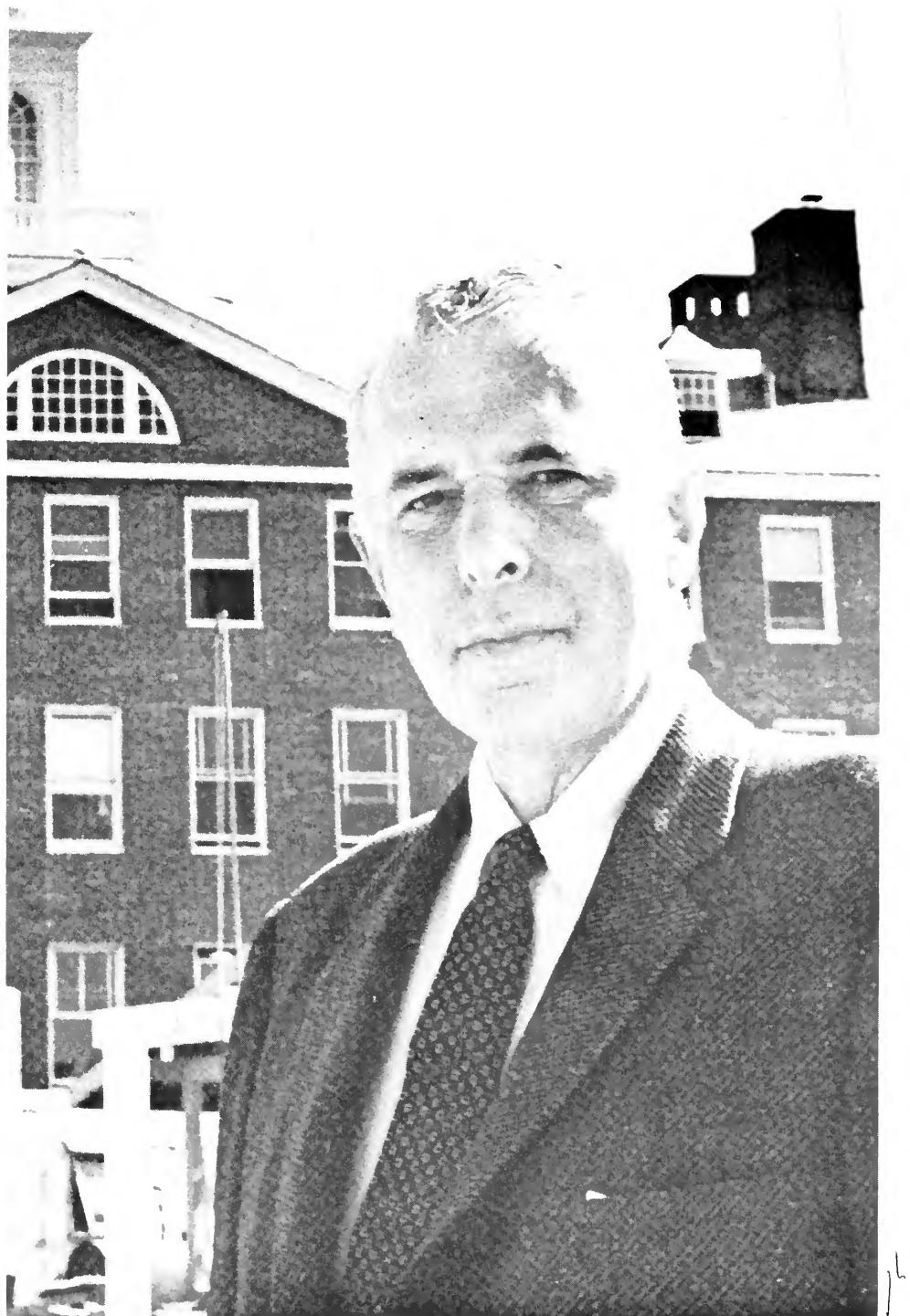
It will be interesting I think to consider briefly what our great universities such as Howard are no longer the way in such a subject as oceanography and why they are not more active in the earth sciences in general. Back on the last 20 years the trend, I think, is very clear

THE tributes in this issue of Oceanus show the great love and respect we all shared for Columbus Iselin. He was a man of broad and encyclopedic interests. He cared not only about our Institution and the study of the ocean but also the whole world. He was a man of very human instincts, with a concern for all mankind.

EVERY great adventure has had its great leaders. Columbus O'Donnell Iselin was one of the giants of oceanography. An era has ended. We have lost a friend and mentor. Since the early days of Iselin and Bigelow, oceanography in Woods Hole and indeed in the whole nation has had a fair wind. He will be sorely missed by all who knew and loved him.

WE are pleased that so many of his friends were able to contribute to this issue and only wish that we could share it with him.

Paul M. Fye



COLUMBUS O'DONNELL ISELIN

25 September 1904 — 5 January 1971

An Appreciation . . .

THE death of Dr. Iselin strikes a special sad note for French oceanographers* because he had been a member of the Comité de Perfectionnement of the Institut Océanographique (Fondation Albert 1^{er}, Prince de Monaco) from 1951 until, in 1966, he was placed on its honorariat list. He had also been a member of the Comité d'Honneur du Centre de Recherches et d'Etudes Océanographiques of Paris since as far back as 1949. Those of us who serve on both these bodies are distressed to lose such an eminent colleague of worldwide fame in matters oceanographical.

Compatriots of his have written fine articles about him in the past, and there will be obituary notices from the pens of close colleagues which will do proper justice to his memory. It would be a great pity, however, if oceanographers of other countries who knew him less intimately, and who cannot say nearly so much about him from personal experience, did not put on record their genuine feelings of admiration for such a wonderful person whose great impact upon their Science stemmed from very much more than professional competence. Looking back over Columbus Iselin's personal achievements in the furtherance of oceanography, one realizes that nobody less needs any trumpet blasts of admiration. One realizes, too, that in a way which always promoted our great liking for him, his was a simple character. We use that adjective as true praise to convey that he was not complicated in his thinking and in the expression of his views. With him there was never any question of "not seeing the wood for the trees." He always knew where he was going, what ought to be done, and to what he could best apply his own endeavours and great gifts. It was because he saw the immensity of jobs to be done that he became a great inspirer of others to the

end that young men should see the attraction and the value of probing the mysteries of the ocean. Fitting indeed is it that he should be remembered as a "pump-primer" **par excellence**, for he had an uncanny knack of seeing the real nub of a problem. This writer well remembers the honour of being invited to take part in that celebrated cruise of the R.V. 'Atlantis' to the Mediterranean Sea in 1948, in order to help with the enlistment of Royal Navy help regarding port facilities. Much correspondence in advance with Iselin led to the formulation of excellent plans based upon his penetrating assessment of the most worthwhile problems, and I shall never forget his final exhortation:—"Keep Your Sights High."

Iselin had been so long in the field of oceanography that memories of him spring up from the early days of the Woods Hole Oceanographic Institution. This writer remembers the building (in Copenhagen) of that redoubtable research vessel the Institution's 'Atlantis,' and has memories of its sailing for home from Plymouth under Iselin's captaincy and with Daniel Merriman and Franz Zorell on board. Six years later, Iselin's presence at the meeting of the International Union of Geodesy and Geophysics in Edinburgh afforded an opportunity to get to know him better, and it was then that one came to appreciate that, to his great love of the sea and its problems, he joined a passion for agriculture. In later years one had the joy of staying with him as a house guest on his farm on Martha's Vineyard, and of seeing his herd of cows in which he took such pride. That pleasant visit amply revealed what a down-to-earth practical man Iselin was as he busied himself with all manner of chores — land clearing and wood cutting amongst them.

Born on 25 September 1904 in New Rochelle, N.Y., Columbus grew up in a family circle adequately endowed with this world's goods and with an avocation for sailing. A great uncle had been four times

*This appreciation was prepared first for *Cahiers d'Océanographie*, Paris.

a defender of the America's cup and his father was also devoted to sailing. At the young age of eleven Iselin built his first boat which (because it leaked) was called 'The Sponge.' This he was able to do because he had learnt from the family carpenter how to use tools. Entering Harvard in 1922 with concentration on mathematics at first, Columbus soon came under the influence of that great man Professor Henry Bigelow whose name is so closely intertwined with everything to do with the Woods Hole Oceanographic Institution, and it was not long before he had turned to oceanography as his main interest. The story of how he ordered the 72 foot schooner 'Chance' to be built in Nova Scotia, and of how he set off in her with a crew of college students on his first oceanographic trip to the icy coastal waters of Labrador has been many times told. That was the beginning of a career which shines with high achievement in fathoming the mysteries of the ocean. Iselin's colourful life and his great accomplishments in his chosen field have been well recorded in print as in the pages of the Atlantic Edition of Time Magazine (the issue of 6th July 1959). The studies

made from the 'Chance' of the movements of icebergs confirmed Norwegian theoretical equations so thoroughly that the American ships of the Ice Patrol forthwith adopted the theoretical estimation of current to predict the movements of icebergs. It was the application of these Norwegian theories to consideration of the Gulf Stream which led Iselin to put forward his ideas that the influence of the Gulf Stream would be felt less far towards Europe at times when its flow in its region of origin was briskest — and *vice versa*. This writer well remembers the impact of his *Nature* paper of 1938 on that topic because it appeared at a time when some European oceanographers were much concerned with the fluctuations of Atlantic influence in the waters off NW. Europe.

Iselin's remarkable additions to knowledge of the Gulf Stream are embodied in a series of papers which have become classical and are well known. What he did in the realm of military oceanography was indeed massive and earned him much honour in his own country which conferred signal distinctions upon him. His views on fisheries and on coastwise oceanography redound greatly to his credit —



The farm at Chappaquandett.

but it would take much paper to list his writing and to indicate their content even briefly. We remember his extremely interesting views on the possible cause of the 'Thresher' disaster as we remember with admiration many another presentation of his views to important events.

This great human personality who was both an accomplished sailor and a first class scientist, who so inspired others, and who was twice Director of the famous Institution which he loved and which loved him, had to his credit a wealth of publications and a host of offices and honours merely to list which would be to produce a sizeable booklet. We shall leave it to others who were closer to him to list his professional publications and other scientific doings; I who wrote this brief note for a French oceanographical publication prefer to use my space to place on record the fact that we are indeed grateful for having known Columbus Iselin whose fruitful life was that of a man who added in very great measure wide humanity, sound practical sense, and high ideals, to the possession of remarkable scientific talents. When we learnt with sadness of his death on the

fifth of January 1971 and realized that never again would we be in his stimulating presence, we realized with a shock that another of the great makers of modern oceanography had passed on.

We of the French Institute record our thanks to Iselin for his services on our governing body and condole with our friends at Woods Hole to whom his death will be an irreparable loss.

J. N. Carruthers

Wormley, Surrey

... one had the joy of staying on his farm on Martha's Vineyard, and of seeing his herd of cows in which he took such pride...



The Chance and the Risk

COLUMBUS was kind enough (and I was lucky enough) to share the long table in his office during the postwar years. Until he met Dr. Bigelow while an undergraduate at Harvard, Columbus was supposed to become a banker. Although some may not agree with me, I believe Columbus would have been as successful a banker as he was an oceanographer. I base this belief upon the fact that he *dared* to speculate and not just because he happened to own two boats named 'Chance' and 'Risk'!

Columbus allowed enough explosives to be stored on Nonamessett Island which, if detonated accidentally, would have blown Woods Hole and vicinity off the map. Yet, these explosive charges were

essential material for the performance of oceanographic research be it peacetime or wartime. There have been many occasions when Columbus piloted 'Risk' across Vineyard Sound in thick fogs with aids such as his seaman's eye, his ears to pick up the sounds of buoy gongs, his very accurate knowledge of local tides and currents, plus a stop watch! Columbus also gambled on how to spend research dollars available to the Institution and he gambled wisely. Truly, he interpreted the "scope of the work" of some of the Navy's contracts broadly but not without considerable forethought and weighing pros and cons. Mostly, his decisions paid off handsomely with resultant scientific and engineering break throughs.

The schaoner 'Chance' was built for C.O'D. by W. C. McKay & Sons, Shelburne, Nova Scotia. She was 77 feet on deck, had a

beam of 16 feet, draft of 11 feet six inches and displaced only 37 tons.



Columbus risked his reputation in selecting and supporting members of his staff, some of whom would never have "made it" had he been a Director whose hiring policy demanded of candidates the possession of at least a baccalaureate degree. He had to make speculative decisions as to when and where to send the Institution's vessels to sea. A case in point was shipping the 'Atlantis' from Woods Hole to a safer berth in New Orleans shortly after the U.S. entry into World War II, when German U-Boats were sinking surface vessels right and left up and down the Atlantic seaboard. His meteorological acumen and his respect for the might of the ocean served him well in

scheduling the departures of the fleet but, above it all, Columbus had the courage to face risks.

Thanks to Dr. Bigelow's conversion, Wall Street's loss became oceanography's gain. I trust other contributors to the Iselin Issue of **Oceanus** will emphasize and articulate his many other sterling attributes among which were his patience, his forbearance, his unmistakably clear writing style, and his gentle but effective power of persuasion. To repeat, I was fortunate to have been his roommate. I envy those who were his shipmates.

Francis C. Ryder
Cambridge, Mass.

Summer and winter, in fog, ice and storm he crossed Martha's Vineyard Sound some 8,000 times over a period of more than 30 years.



RISK TAKERS

HERE'S an incident which brings out Columbus' true nature.

It was a Friday and due to a cancellation of the commercial ferry our little group of 'Risk' takers bound for a weekend on the Vineyard had been joined by a handful of ferry passengers, among them Kingman Brewster, now president of Yale. When we arrived at our mooring at the head of Tashmoo Pond it was plain that it would take two trips in the large rowboat to get us all ashore.

And who loaded the passengers for the first trip ashore and who plied the oars? Columbus, of course, in his usual quiet way had beaten us all to it.

Back on the 'Risk' I said to his long-time friend, John Churchill, who had sailed on the schooner 'Chance': "Columbus is as much at home rowing those people ashore as he is addressing the National Academy of Sciences." "More," replied John.

Woods Hole, Mass.

Joseph Chase

Wonderful Sea Stories

COLUMBUS ISELIN and I were closely associated during the latter part of World War II, from January 1943 until the end in 1945, and we worked together to build up American oceanography in the post-war era. His enthusiasm, imagination, and special way of talking about oceanography and oceanographers had an enormous impact, not only on government officials, but especially on the scientific mandarins, nearly all of them physicists, who controlled the course of American science in the early 1950's. I don't think he ever fully believed that the Pacific Ocean was as interesting or important as the Atlantic, or that good oceanography could be done in California as well as in Cape Cod. Nevertheless, Woods Hole and Scripps grew pretty much in parallel, and it turned out that whatever was good for one institution quickly helped the other.

One of the high points of my life was a trip Columbus and I took together to Florida, Puerto Rico, and Trinidad in the early spring of 1943, when German submarines were sinking about one ship a day in the Caribbean. We saw a whole series of admirals and told each one of them how important oceanography could be in fighting submarines. The admirals were understandably skeptical, but they were so desperate they were willing to seize on any straw of hope, however fragile. What I remember particularly, however, were the long evenings in which Columbus told me wonderful sea stories, most of which seemed to center around a wild friend of his youth named Terry Keogh.

In the later 1950's and early 1960's, we were both members of the Committee on Oceanography of the National Academy of Sciences, which for several years met about once a month, and in this way we saw a good deal of each other. Every summer, the Committee would meet at the "Lubec Oceanographic Institute," an imaginary organization established by our fellow Committee member, Sumner Pike,

down East in Lubec, Maine. Its stated objective was: "the study of the ocean and other fluids." These were marvelous weekends, and Columbus' stories were among their most memorable aspects.

In spite of his skill as a raconteur and as a scientific salesman, Columbus was a modest, shy man, with no discernible egotism and little sense of his own greatness.

Roger Revelle
Cambridge, Mass.

A FEW weeks ago in Saudi Arabia, of all places, someone said to me that he knew Columbus Iselin, Jr. and asked what kind of a man is his old man. Sadly I had to mention the recent death of Columbus, Sr., but to say what kind of a man he was in the brief time that is allowed for conversation at a party was difficult. I could say only that he was a great and kindly man and that it would take all night to tell why.

My personal experience with Dr. Iselin was slight, but highly treasured, and as a shipmate rather than a scientist. I was first introduced to him by Captain Pike in the office. The great man blushed, mumbled something, and backed out; it should have been myself who did that!

Much later we became better acquainted when he joined the 'Atlantis II' in Cape-town in 1963 to come home with us. I believe that it was his first sea voyage since World War II, or at least, for many years, and it also was his last major cruise. At any rate, he didn't come to run the show, but to observe and comment upon our performance. Our work was "water-catching" i.e. hydro stations, BT's, weather obs, echosounding, etc. — simple work yet, A. R. Miller had developed a team that did these things well and quickly and it was nice to get the great man's compliments.

He spent much of his time on the bridge watching the sea and sky, making comments about what he saw, and talking with all who came by. At other times his cabin door was usually open to whomever wished to come in, sit and tell stories, or listen to him. And in this role I greatly admired him.

Few exceeded him as a teller of tales (parables?). The stories always had a neat way of summing up some facet of human nature or some truth of nature.

Many people came to him for advice

on oceanographic and personal problems, from teenaged girls to senior generals and admirals. His outlook on human affairs was so balanced that everyone had complete confidence in his opinions. Certainly he guided many people in the right paths, away from the traps and snares. If only for that, his influence will long be felt.

But it is as a story teller on the bridge and in the cabin of 'Atlantis II' that I shall best remember him.

Robert Munns

o/b R.V. 'Chain'
Indian Ocean



In 1958, he received the Medal of Merit, highest civilian award of the U.S. government. The citation is printed on page 42 of this issue.

I NEVER was a student of Columbus O'D. Iselin; never had I the opportunity to work with him. Nevertheless, through his studies of the circulation of the North Atlantic and, more particularly, of the Gulf Stream system, I used to consider him one of my teachers before we had ever met.

More than two decades ago, we met for the first time. His habitude was one of a great man, of a celebrity. In reality, however, I learned to know in him, in spite of his great mental energy and persistent intelligence, a cordial, almost humble man. In numerous connections his advice and guidance proved to me most significant, not only professionally but also humanly. He had the rare ability to give instructions, to guide, and to correct mistakes in a way which made the younger man to himself, not offended but rather co-equal in a stimulating and encouraging way.

There are many of us, in different parts of the world, who will remember Columbus as a dear older brother.

Helsinki, Finland

Ilmo Hela

Oh, they were things of Irish beauty . . .

I FIRST met Columbus in 1931 in Dr. Bigelow's office in the Museum of Comparative Zoology. The occasion was to "sign me on" as a prospective member of the crew of the 'Atlantis' for her forthcoming maiden voyage, Copenhagen to Plymouth, England, to Boston and Woods Hole, Massachusetts. He was four years older than I, a horrendous age differential to me at that youthful stage; perhaps just as well, since I immediately regarded my future skipper with due respect—respect for the "middle-aged," that is. The interview was brief. Certainly I had not much to commend me: a misfortunate and broken college education, a love of the water, natural history, and fishing in all its varieties, and limited high seas' experience on commercial trawlers on the Banks. At any rate, he took me on—a pig in a poke, pushed at him, I suspect, by familial ties. If memory serves, my way was paid abroad and my salary as an 'Atlantis' "seaman" was handsome, especially since there was no way to spend it for the 6-7 weeks between ports.

My first real look at Columbus, and the one I shall always remember, was at Burmeister and Wain, ship-builders, in Copenhagen harbor, mid-June 1931. The 'Atlantis' was tied up and we were straightening things on deck prior to a trial run. Suddenly Columbus and his bride of two years, Nora Lapsley, appeared above us, deck-side. There was a wave of the hand, a reticent but deep-throated "Hello," a sense of pride and excitement which somehow communicated itself to us with no visible outward emotion. He was never a Captain in the military sense; things just got done without orders being given. We were proud of our assignment, he of his; he shed an easy confidence, and if he had any misgivings about his responsibilities, as well he might at 26, he never showed them.

His only frailty, if indeed it be called such, was his concern for and generosity to certain characters who found themselves in trouble—more often than not, broke or intemperate. One Terence Keogh, black-sheep son of Justice Martin J. Keogh of Tammany Hall, was our bosun; one of the best at sea, but with a massive thirst ashore. He could tie Columbus around his little finger. We literally hauled Terry out of a jail in Copenhagen in the wee small hours just before we sailed, and Columbus told him he was too valuable to risk ashore in Plymouth. Confinement to the ship (mercifully we were anchored off-shore) was a monstrous torment to Terry, and each day in port his pleadings to Columbus became more eloquent. Oh, they were things of Irish beauty and on the next to last day before sailing Columbus capitulated to blarney interspersed with word-of-honor promises of sobriety. Several hours later a Royal Navy gig stood by to inform us that one of our men, Keogh by name, was in the Plymouth gaol. When we inquired as to the charges, it turned out that he had been arrested for ripping a toilet seat off one of His Majesty's public conveniences and attempting, as in quoits, to "ring" the Bobby who was directing traffic at the busiest intersection. Columbus' patience must have been strained to the limit, but he never showed it; his humor saved the day.

Terry's skill

We were not long at sea when Columbus got his leg tangled in the main sheet, tacking in a stiff North Atlantic breeze. The burn was fierce, but he bore it with fortitude though confined to his cabin for most of the rest of the crossing and forced to relinquish command to the 1st Mate. Fresh off a Cunarder, our new captain was wholly unaccustomed to sail and much given to orders, facts which did little to endear him to the predominantly Scandinavian crew whose members had already become devoted to Columbus; indeed, there might well have been mutiny had it not been for Keogh's tact and nautical skill.

We landed in Boston in early September and most of the crew scattered. It seems to me that four of us, Columbus, Chief



Trial run of the 'Atlantis.'



Columbus Iselin, first captain of the 'Atlantis.'

Backus, Knute Nielson, and I took that 148-foot ketch from Boston to Woods Hole via the Cape Cod Canal alone. Foolhardy? It didn't seem so then with Columbus at the wheel.

Later, from the viewpoint of a Trustee, I saw Columbus as Director and Senior Scientist of the Institution. My admiration grew as he guided the Institution to a ten-fold expansion through the decade of the 40's. Now the age-gap disappeared, but the circumstances never permitted the intimacy of friendship I should have liked.

And finally, there was his gallant appearance and reminiscent speech last June 18th on the occasion of the dedication of the new Iselin facility.

* * * *

The central window of the apse of St. Michael's Church (1138 A.D.) in Linlithgow, not far from the Firth of Forth, is in memory of an earlier oceanographer,

Charles Wyville Thomson of 'Challenger' fame. The motif is after the 104th Psalm, Evening Prayer, *Benedic, Anima mea*:

- 24 O Lord, how manifold are thy works! in wisdom hast thou made them all; the earth is full of thy riches.
- 25 So is the great and wide sea also; wherein are things creeping innumerable, both small and great beasts.
- 26 There go the ships, and there is that leviathan, whom thou hast made to take his pastime therein.

The words of the psalter are similarly apposite to the memory of Columbus O'Donnell Iselin. A century apart, both men were giants; they represented two great era of oceanography; either would have fitted the other's shoes.

Daniel Merriman
New Haven, Conn.

COLUMBUS ISELIN AND THE MEXICAN BURROS

COLOMBUS ISELIN was a man of great composure and many strengths. These traits often cropped up, sometimes quite unexpectedly. One such time that was not of much consequence, but which has never been forgotten, has often been related by both remaining participants around the oceanographic circuit.

One late Friday afternoon in Woods Hole, Art Maxwell and I were given a lift to Boston by Columbus and taken to his winter home, at Milton, for dinner prior to catching the midnight train for Washington. After we had two generous cocktails, Mrs. Iselin joined us and with a few pleasantries chose the opportunity, in front of witnesses, to advise Columbus that she had purchased two Mexican burros for the children's Christmas.

After a seemingly interminable silence, Columbus questioned flatly, "Nora, where are they?"

"In the basement," Nora replied with equal lack of expression. "I've had a carpenter fix them two nice stalls where they can stay until we can take them to the Vineyard."

With unshaken control, Columbus had but one further question before we went in to dinner. "But, my God, Nora, what will the police say?"

I shall always remember Columbus Iselin as a man of great composure and many strengths.

Gordon Lill

Washington, D.C.

Go ahead and prove it

MY strongest remembrance of Columbus Iselin was the breadth of his interests. In whatever field you were interested he could suggest other workers with whom it would pay you to get in touch. Along with this was the encouragement he offered. When I told him that I believed the deep scattering layer was probably caused by euphausiids — and I was probably

wrong — he said, "I am sure that you are wrong, but go ahead and try to prove it." This was typical of him.

Hilary B. Moore
Miami, Florida

Improved English

LIKE many scientists, Columbus Iselin was fascinated by the Gulf Stream. The 'Atlantis' sections through the Gulf Stream have set an example for the extremely successful research work at sea, especially under difficult current conditions. Iselin's insights obtained by these investigations with the 'Atlantis' are reflected in his publication: "A study of the circulation of the western North Atlantic." The three names: Iselin, Gulf Stream, and 'Atlantis' are closely linked together, since he introduced a new epoch in the exploration of the Gulf Stream.

I am sure there are numerous stories about the Woods Hole Oceanographic Institution in the early thirties. One story that I was told by my late colleague Dr. F. Zorell may be mentioned at this place. It tells about seagoing oceanographers: Iselin was chief scientist on the maiden cruise of the 'Atlantis' from Europe to America in 1930, and Zorell was joining as a guest. He did not know English very well, but this ability improved during the cruise as he learned from Iselin and the other crew members. Back on shore Zorell found that he had to be very careful in using his vocabulary because it was a sailor slang that he had learned and of no use for a conversation with a lady.

Günther Dietrich
Kiel, Germany

During official ceremonies Columbus could not be found on a podium or on a chair in audience. He preferred to sit in the background where the "tape recorder" of his mind recorded the important and rejected the excess rhetoric.
jan hahn

I WISH I could find the right words to express my feelings about Dr. Iselin.

What can I tell you about Dr. Iselin, except that he was a true gentle man, quiet in his speech and a very humble man. He would help anyone who asked for his advice (sometimes spent hours just talking to the person) — he was never too busy for that. He always answered letters from prospective oceanographers, no matter how busy he was, even if the letters were from youngsters.

He always treated me with great respect and I feel fortunate to have worked for him. I, like many others, will never forget such a great man!

Kaleroy L. Hatzikon

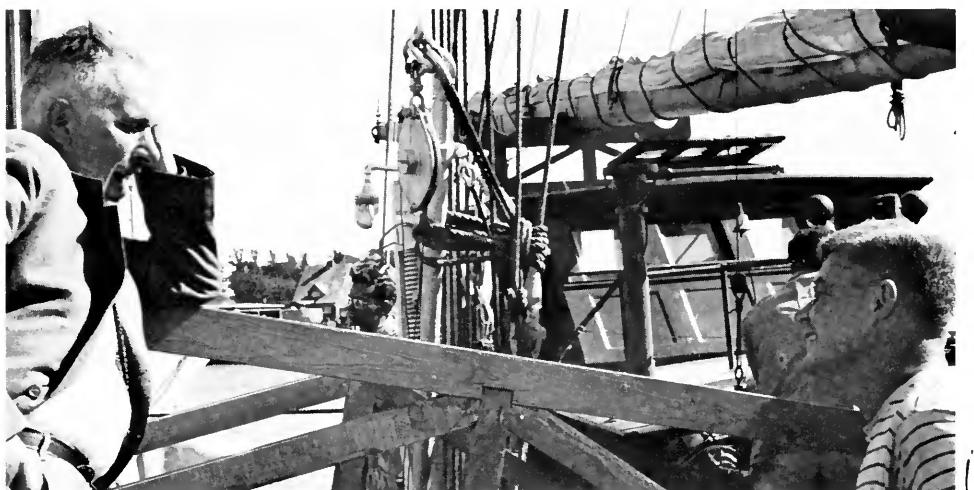
Woods Hole, Mass.





Seismic reflection and refraction shooting with explosives was initiated by Dr. M. Ewing and continued for many years without accident on board our ships. Still, no one was happy with tons of TNT on the deck of our small vessels. The methods have been replaced by using gas or electrically induced "booms".

Columbus invariably saw the ships off to sea and greeted them on their return. Here he chats with "Doc" Ewing just returned from A-150, National Geographic Society cruise to the Mid-Atlantic Ridge in 1948.



"He watched us in a curious way" . . .

MY first meeting with Columbus was memorable. It occurred in the latter part of the summer of 1935. A. P. Crary, H. M. Rutherford, and I completed working across the continental shelf and coastal plain at Cape Henry, Virginia, doing the marine part of the work on the 'Oceanographer' of the U.S. Coast and Geodetic Survey. We had got few results in the

marine part of that traverse owing to a disruption in the working plan of the ship caused by a serious motor accident just before sailing time. The Chief Scientist lost his life and the Captain was hospitalized for several months. Professor Richard M. Fields who had been the leading spirit in a distinguished committee which had made it possible for us to undertake the

whole program had invited me to spend the night in his summer home in Duxbury. He drove with me to Woods Hole and introduced me. I explained the hopes for seismic refraction work to learn the structure of the continental shelves and received an opinion that the work was of interest to the Institution and that Dr. Bigelow and Columbus would make the 'Atlantis' available for a short cruise to the Virginia Cape region to complete the work.

In the early part of October, I received permission to be absent from my classes at Lehigh for a period of two or three weeks, and we came to Woods Hole when the ship was expected to return from a cruise and take a sort of post-season cruise.

Dr. Bigelow wanted to be sure that there would be no irresponsible use of explosives to endanger the ship. He had us first go into a sand pit northeast of Falmouth, accompanied by Henry Stetson, to make some tests about the distance between an electric detonator and some of the types of explosives to be used that would be necessary in order to avoid detonation. We succeeded in convincing Henry that there was no risk in the procedure which we planned to follow.

Use of explosives

Dr. Bigelow's second safeguard was to arrange for a short preliminary cruise south of Nomansland off Martha's Vineyard, with Columbus aboard, to observe what kind of sailors we were and whether our procedures were safe according to his estimates. We went down to about 20 fathoms south of Nomansland and worked through the remainder of the day and all of the night trying to get the seismic refraction measurements. For the daytime work we anchored the ship and sent Crary in a whale boat with two of the Scandinavian sailors, to shoot charges at various distances. This small boat operation was not feasible by night, but we continued to make tests by setting up geophones on the bottom and floating the charges off the stern of the 'Atlantis' using pieces of wood for buoyancy and the wire to the electric detonator for tether.

During the small hours after midnight, only Columbus and I were working. He

was tending to the shooting and I was tending to the recording. We got the wire to one of the charges, less than half a pound of dynamite, caught somewhere under the stern in the rudder or the propeller. It seemed like it was not going to come loose. We decided to take a coffee break and think it over. We discussed various possibilities, including the probability of explosion from action of the propeller, the likely extent of damage in case of an explosion, etc., etc. The decision was that the best move would be to start the propeller dead slow and gradually speed it up to full ahead. This was carried out without any ill effects, and we were quite confident that by then the little charge of explosive was entirely free of the ship. Columbus had weighed all available evidence, quietly made a decision, and followed through on it.

After dawn on the second day, we made a few more tests in the whale boat, the weather was a little rougher than it had been the previous day. Columbus was watching us in a curious way—which I finally decided amounted to monitoring us for signs of the expected seasickness. He seemed reassured when the whaleboat returned for more explosives, and in it was Albert Crary chewing a big plug of tobacco.

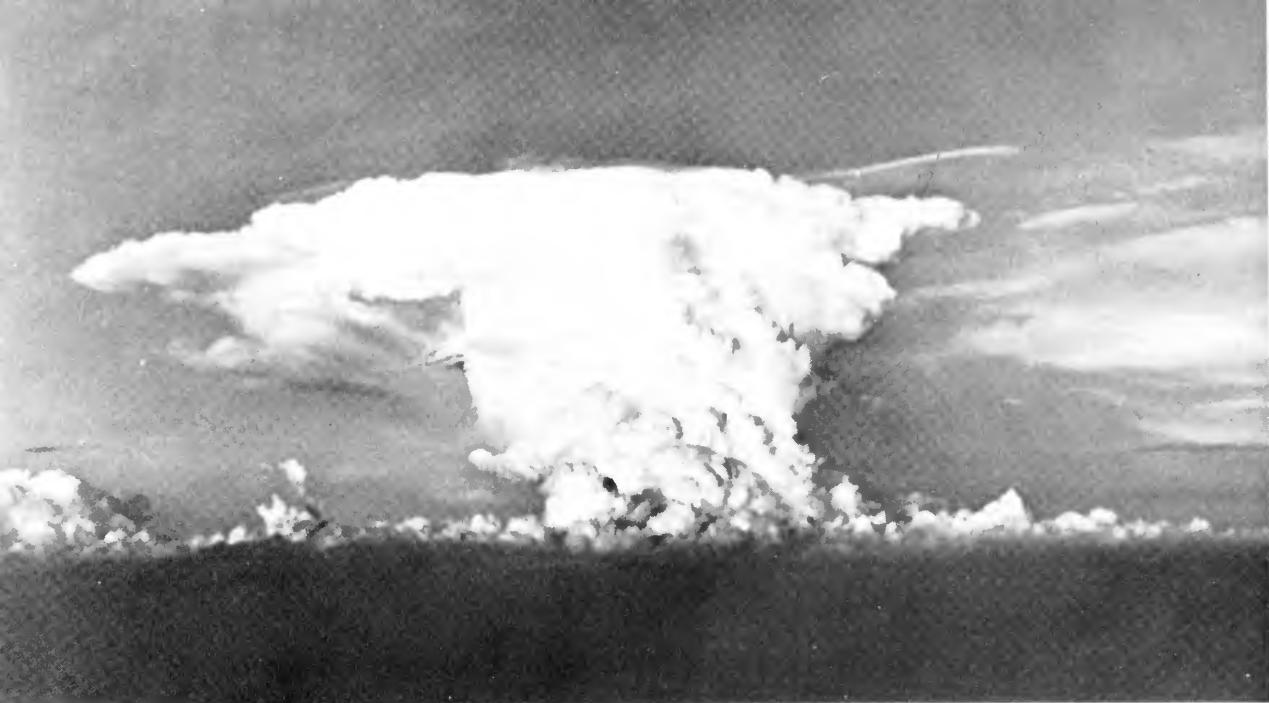
Turning point

Toward the end of this day, we returned to Woods Hole. Dr Bigelow was reassured, and the following day we set off for the Virginia Capes and the completion of our continental margin traverse cruise on the 'Atlantis.' That cruise was a turning point in my career.

My first meeting with Columbus led to a friendship as pleasant as any that I have formed in my life. His guidance and advice at all stages from that time until the present have been a principal source of my learning how to work on the high seas. His warm and steady friendship, his love of the sea as an object of study, and his compassion for the people in all walks of life have been a priceless source of inspiration for me, and, I am sure, for many others.

Palisades, N. Y.

Maurice Ewing



Fun and Productivity

IN 1962, I dedicated my monograph* on sea-air interaction to Columbus Iselin with the words:

"This effort is dedicated to Columbus O'D. Iselin to whom the writer owes her interest in the sea and her opportunity to pursue it without restriction. His efforts have provided a stimulating atmosphere of broad inquiry into the earth sciences and a group of lively and productive interacting individual colleagues without whose experience and participation such an ambitious endeavor could not have been undertaken. His glorious confidence in us all has given each of us the necessary self-confidence to tackle difficult problems, while at the same time his own humility in the face of the sea's complexity has imbued us with the necessity of continuous self-criticism in our attempts to understand its behavior."

Now many years later that I am, on a small scale, a Laboratory Director on my own, Columbus' example is my main guide and to it I attribute the fun and successful productivity we have enjoyed. As I interpreted it, his secret was to pick promising people, mostly young ones, and to allow

them all possible freedom in their research, even to make mistakes and to learn by them. At the same time he was always available to offer advice when called on and to help us out of whatever trouble circumstances or our own actions brought upon us. While fostering freedom of inquiry, Columbus did not encourage undisciplined scientific dilettantism; I shall not forget his oft-repeated statement that he himself must spend at least 50% of his time "earning a living"—that is, directly devoted to the main mission and support of the laboratory. I have not only tried to follow his example in this balance between free inquiry and mission orientation, but have also tried (I think successfully) to pass it on to my younger colleagues, students, and staff.

In retrospect, my years under Columbus' directorship at Woods Hole were the happiest and most productive of my life, and also I think, great years in the flowering of marine meteorology.

Joanne Simpson
Miami, Florida

*This work appeared as Chapter 4 in **The Sea: Ideas and Observations** (Vol. 1), pp. 88-294, by Interscience Publishers.



I've never seen the barometer so low . . .

I SHALL always remember Dr. Iselin because he was, so far as I have ever been able to determine, the only man (on Cape Cod, at least) who "called" the great hurricane of September 21, 1938.

In the late 1930's I was a reporter for the Falmouth Enterprise — the only reporter. It was my job in those days to visit each of the outlying "villages" once a week and seek out various individuals in the community for the latest news.

One of my beats was, of course, the Institution, although in that depression era it was in darkness 99.44 percent of the time. The only man I found in his office regularly (most of the other offices were unoccupied, anyway) was Dr. Iselin.

I paid him my usual call that Wednesday and we chatted until I led up to the inevitable question, "What's new?" He thought a minute and came to the conclusion, not unusual, that nothing was new at the

Institution which would interest Falmouth's readers. But that day, just as I was about to leave, he added: "I've been watching the glass all morning and it's my feeling that we're going to have one helluva tropical storm. If I were you, I'd go home and stay indoors this afternoon because I've never seen the barometer so low. It has got to be a storm of major proportions."

I didn't go home (except for lunch) but after lunch went back to the office and started typing up what little I had gleaned in Woods Hole that morning. It wasn't until we got a call from the police station that the steeple of the old Methodist Church on Main Street (then located in front of the Elm Arch Inn) was about to go down that I remembered Dr. Iselin's warning. I high tailed it into the boss, Mr. George A. Hough, Jr., who promptly heeded the prediction and hurriedly closed shop.

It was the beginning of a long night and next day for me, and throughout a number of hair-raising experiences I kept wondering how Columbus Iselin had determined that a hurricane was coming. In those days of my youth I didn't even know what a barometer was!

George L. Moses
Falmouth, Mass.

WEATHERING STORMS

MY earliest recollections of Columbus are in New Rochelle where we lived until I was about four or five. They are distinct and clear in my mind to this day. His name was fascinating to me and I loved to roll it over my infant tongue and think of it. And it seemed to me then that he and his name were perfectly suited. Those early impressions of his largeness of character, his essential simplicity, and his purposefulness have never altered.

Years later, when we were growing up, Columbus reappeared in our lives first as legend and then as suitor of my sister Nora. The legend reached us through Terence Keogh, our cousin, and Columbus' friend, follower and sail-mate throughout Terence's short life. It was a curious, almost symbiotic relationship of two completely opposite persons each one requiring something of the other's dominant characteristics. Columbus' calm, generous and purposeful nature responded to Terence's volatile wild humor and total unpredictability. They were both brilliant sailors and had sailed together since childhood. John Churchill and Bob Jordan were also his cruise mates in those early days sailing to Labrador and across the Atlantic in 'The Chance.' In his role of suitor to my sister Nora he included our brother Howard on the trip to Cowes in the summer of 1928. Howdy was only sixteen or seventeen and had had no sailing experience so his inclusion was definitely the act of a suitor. His devotion to my sister Nora from their first meeting was complete and I believe never varied throughout their more than forty years together.

In the summer of 1933 Ned Stone and I cruised with Nora and Columbus from Woods Hole through Long Island Sound, the East River (Sis LaFarge hung a bedsheet out of her window at the Doctor's Hospital where she had just produced Phyllis and we raised flags and waved as we went ripping through Hell Gate). From there we went up the Delaware Bay, across the canal into the Chesapeake Bay and



up and down the Eastern Shore and Tidewater Virginia, exploring the rivers and plantations, until we reached Norfolk and it was time to go home. We set a course directly for Martha's Vineyard and started off one morning in July. By night, about 70 miles off Cape May, we found ourselves in a bad blow. All sail were reefed and the tiller lashed. We were blown before the gale for two nights and days and ended off Kittyhawk, South Carolina. There we had to hoist sail and beat back up the coast to Norfolk in the teeth of the, by now, diminishing gale. We pumped the entire time; everything was wet — bunks, stove, etc. Large pieces of gilt ornamentation from the bow of our chartered ketch kept flying back through the wind and spume. The only other vessel we saw was a U.S. destroyer. Ned Stone suggested I be transferred to it (I was pregnant). Columbus said firmly, "Don't be silly, she's much more comfortable here" and did not point out that such a maneuver under the circumstances would have been quite impossible. We spelled one another at the pumps and I can see Columbus lying fast asleep on the deck of the cabin in his boots and oilskins while the bilge water washed back and forth over him.

Looking back on this episode I attribute the fact that none of us suffered from fear

— hunger, cold, seasickness, and exhaustion yes but never panic fear — entirely due to Columbus. His attitude was that this situation was not in the least unusual, was, in fact, to be expected if one went to sea and simply called for resolution, endurance, and vigilance. There was no talk about it, it simply emanated from him and was exceedingly bracing. He told me years later that he had not known how our charter, the 'Lady Kelvin,' would behave under the buffetting she received. I have no doubt he had a practical plan for

exactly what to do in the event that she broke up.

I think so often, too, of his quality of understanding and sizing up a person's situation or problem and doing something specific about it with no fuss and the minimum of talk. I know from experience that he had an unusual capacity to grasp another's problems and the imaginative ability to suggest alternatives that could relieve them.

Mrs. Mott B. Schmidt

Katonah, N. Y.

PERSONNEL PROBLEMS—some unknown person took off with the 'Asterias,' ran out of oil and burned out the engine. C.O'D. said "If he was from the institution, he should be fired, if it was someone from outside and he could figure out how to start that engine, he should be hired."

ADMINISTRATIVE ATTITUDE—once when being complimented by a staff member on how tolerant and broadminded an administrator he was, Columbus sat quietly. However, when the staff member said that sometimes he was so tolerant it hurt, Columbus smiled and said "Well sometimes it hurts me too."

LAST minute alterations to equipment before a cruise almost always involved an all night stand. On one occasion, the carpenter shop was locked—and the scientist involved chopped down the door with a fire ax—so the ship could sail at dawn. Come morning the irate carpenter confronted Iselin with an ultimatum of bringing the scientist back into line. Columbus' solution was prompt and to all but the carpenter seemed reasonable. His advice—"Well I guess the thing for you to do is take an ax and chop down his door."

A. C. Vine

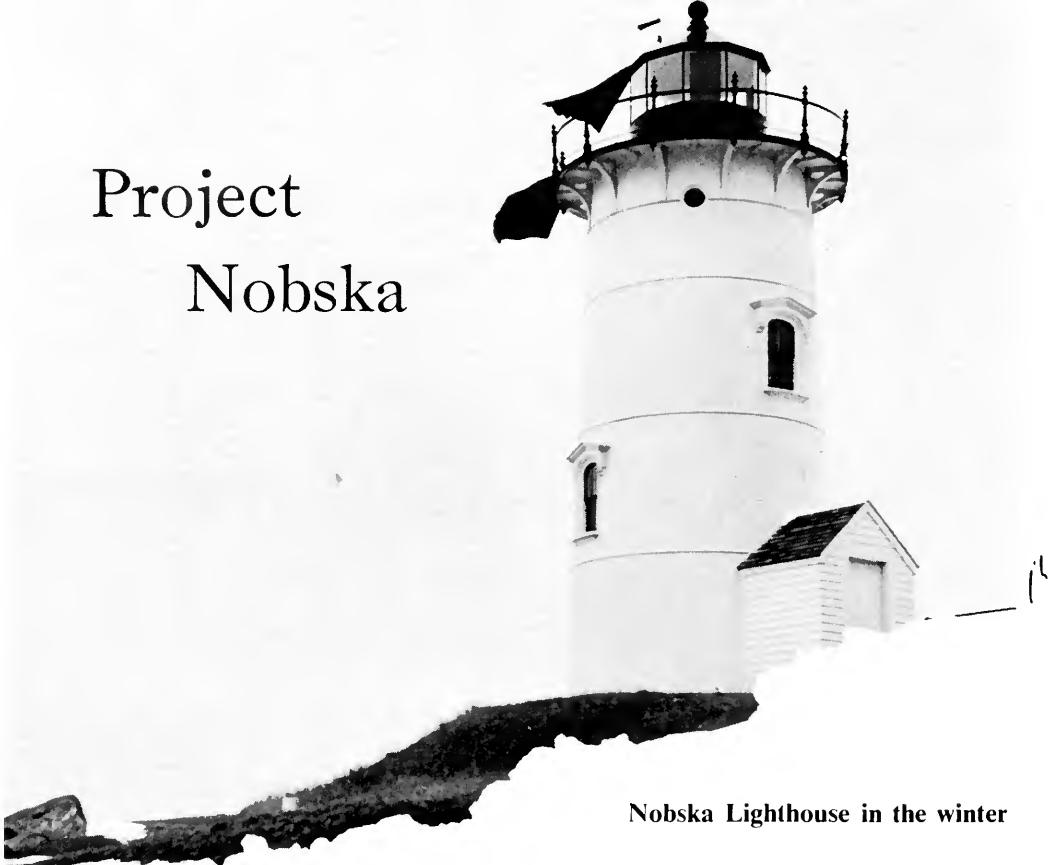
So much to know . . .

COLOMBUS was one of our great figures in oceanography. After World War II when all the scientists were returning from their war assignments to their laboratories, he was one of the leaders in this shift, the transition from the applied area to the research area. I observed this from Washington and as a Trustee, and also as a summer neighbor at the Vineyard where he was the gentleman farmer. He poured concrete for barns and outhouses with the same enthusiasm as he did oceanography. I can only quote him regarding his love for the ocean, and this is not verbatim but in his spirit: "Just in sitting at the shore or in a rowboat and looking at the ocean, one realizes there is so much to know and to learn from the sea, both as a thing of beauty and as a source of information."

E. R. Piore

Armonk, New York

Project Nobska



Nobska Lighthouse in the winter

IN 1956 Columbus Iselin, with his usual diffidence, agreed to direct Project Nobska — the first of the National Academy of Sciences' Woods Hole Summer Studies — after some difficulty had been experienced in finding a suitable director. Columbus was one of the most conscientious and faithful members of the Committee on Undersea Warfare, which was responsible for organizing the study. He was one of the key scientists of the World War II research effort whose continuing advice and counsel the Navy sought to have available when it asked the NAS to form the Committee in 1946.

Because of the extensive advance planning and short intensive period, Columbus accepted the directorship with some reluctance, in large measure out of a feeling of patriotic duty. In those days there were no questions about the need for preserving national security through an adequate defense and Columbus, along with his fellow committee members, was dedicated to the Navy with both its strengths and weaknesses. In 1956, the potential importance to the Navy of a variety of technological advances was just beginning to be realized. The 'Nautilus' had demonstrated the usefulness of nuclear propulsion for

submarines, the experimental submarine 'Albacore' had shown how greatly improved speed and maneuverability could be achieved through streamlining, and there was talk of using the concealment of oceans to hide missile-launching platforms. Columbus perceived the implications of these and other developments and also foresaw the continuing importance of an adequate understanding of the media in which the Navy operates — the sea and the air above it. From his World War II experience he well knew the extent to which the performance of the Navy's ships and equipment could be degraded by the weather in and above the sea, and by ignorance of oceanographic conditions.

As the Academy staff officer responsible for organizing the study, it became a necessity as well as a pleasure for me to work closely with Columbus, and a casual acquaintance ripened into a close personal friendship. During the winter of 1955-56 I found myself a frequent overnight guest in the Iselin's big old rambling home in Milton, driving down to the Cape with Columbus on the following day. The younger members of the family were still at home and it was clear that Nora Iselin

devoted most of her time to them however, the three of us would have cocktails together before dinner and the conversation tended to be about the welfare of the Oceanographic Institution and the problems of the Navy. Having lost both a brother and a close relative in the North Atlantic during World War II, Nora found it difficult to be detached and objective in speaking of the sea; Columbus took a relaxed and philosophical approach, speaking with some diffidence, as though not wishing to impose his views on anyone. This, along with his quiet, unassuming manner, I came to recognize as a trait of character.

His traits

He had an extraordinary way of reducing complex problems and issues to their fundamentals, which he often stated in a way that had an elegance of simplicity and practical straightforwardness. Without appearing to realize it, he was a keen and compassionate observer of human nature. He understood what individuals said or did in terms of their motivations. Although he was a reserved, essentially private person, these qualities made him many friends and followers, as the experiences of the Summer Study were further to demonstrate.

One of our first tasks was to locate a site for the summer study group to meet. Columbus suggested that Geoffrey Whitney, who worked at the Oceanographic Institution, might be willing to lease his summer home, Little Harbor Farm, as indeed he was. I remember the three of us tramping over the snow-covered grounds in March and shivering as we walked through endless rooms in the unheated house. Turning this big old house into office and conference room space brought many problems, but must be counted as a considerable success. The Academy had no previous experience in this kind of undertaking and at every turn Columbus and, through him, everyone at Woods Hole was exceedingly helpful.

In due course, a beautiful Cape Cod summer arrived and the ten-week project got under way. An excellent group of scientists and engineers assembled and the Navy's top brass took a keen interest in the deliberations. The pace of activity was

often fast and furious. Columbus supplied the leadership and stabilizing influence; the Associate Director, Ivan Getting — a vice president for research from Raytheon — supplied much of the energy and initiative needed to accomplish what was desired within the time available. The combination worked out well and the results of the study had far-reaching effects, not only on the Navy but, I would deduce, on the individual participants themselves. Most, if not all, would agree that their experience that summer marked a significant point in their careers. A number subsequently became university presidents or laboratory directors and one participant, Paul Nitze (who crewed for Harvard with Columbus) eventually became Secretary of the Navy. Paul Fye, a "Nobska" member, was named the director of the Woods Hole Oceanographic Institution the year following and the new director of research at the Institution, Robert W. Morse, at the time of his participation in "Nobska," was a physics professor at Brown. In the intervening fifteen years or so, membership on the Committee on Undersea Warfare has inevitably changed, but "Nobska" is still regarded as perhaps the high point of the Committee's twenty-five years of existence.

Much credit

For the success of that summer's effort, much credit is due Columbus Iselin, who believed that what he set out to do was of great importance to the Navy and the nation and who was willing to make the personal sacrifices necessary. Until his illness of the past few years made it absolutely impossible, Columbus attended the meetings of the Committee on Undersea Warfare faithfully. It is impossible to know what the effort may have cost him, but he attended the 93rd meeting in Annapolis in November, 1970. This was his last. He had missed the previous few meetings and was particularly glad to be back among his old friends. During the executive session, with not wholly concealed emotion, he suggested that perhaps the time had come for him to be replaced by a younger oceanographer.

George W. Wood
Washington, D.C.

COLOMBUS ISELIN was one of my oldest friends. We first met as 15-year olds and roomed together our last year at boarding school. While we were there at St. Mark's, he was active in the formation of the S.M.B.C., the "Boat Club" which was the school's initial entry into the sport of rowing. Columbus was even then noted (and kidded) for his physique, which stood him in good stead throughout his distinguished rowing career at school and college.

He must have acquired a good sized sailboat at a comparatively early age, for I can remember his shanghaiing groups of us during our freshman year at Harvard to work on her on weekends. Actually, it did not take too much persuasion, as it was lots of fun on a warm spring Sunday to be provided with scrapers or pails of varnish and brushes with which to attack her spars. In this respect he was a sort of nautical Tom Sawyer.

My most recent contact with Columbus dates back twenty-odd years to Woods Hole. The 'Atlantis' seemed to offer exactly what my teenage son Bob needed in the way of a summer job. He and Columbus, Jr. were of an age, and when Columbus, Sr. was picking summer crews for the big ketch, he generously included Bob along with young Columbus. Bob was allowed to have the same job on one or two successive summers, and he and I shall always be grateful to Columbus Iselin for those priceless opportunities.

Hollis S. French

Annisquam, Mass.

ONE example of the informality which was pervasive about the Institution in Columbus' days is the time Fritz Fuglister asked Eloise Soderlund, his new assistant, to dig a certain paper by Columbus out of the files. Some time later Eloise, practically in tears said, I can't find that paper, or for that matter, anything in the files under Iselin." Fritz thought for a moment and said, "Did you look under C for Columbus?"

Dean F. Bumpus

Woods Hole, Mass.

"He was a sort of
nautical Tom Sawyer"

MY acquaintance with Dr. Columbus O'D. Iselin began in September 1939, when I sailed to the United States to attend the General Assembly of the International Union of Geodesy and Geophysics held in Washington, D.C. In this meeting I met him and several of the members of the Institution. I went to Woods Hole just after the termination of the meetings, but I missed him there because most of the scientists there had not yet returned.

The World War II was quite a nightmare to me and for almost ten years during and around the hostilities. However, I was anxious to meet my old colleagues in America, so I left Japan in June 1951 and stayed in the United States for two months. I met Dr. Iselin on this trip and spoke many things about oceanography and its development in America and in Japan. During the 1930's Dr. Iselin accomplished many distinguished works on the hydrography and dynamics of water movements in the Northern and Equatorial Atlantic.

Since the end of hostilities, I met him in many places, at the meeting of IUGG, of IGY held in January 1957 in Goteborg, Sweden, of the SCOR, etc. He was always very gay. About ten years ago I was given funds from the Carnegie Institution to stay in the United States for six months and stayed for seven weeks at Woods Hole. However, I was told that Dr. Iselin was seriously sick so I could not meet him.

Perhaps the last time I met him was in November 1964 when I went to Hamburg to attend SCOR meetings there. This time I enjoyed him very much.

On request by Mr. Jan Hahn, I am happy to contribute a tiny report about the friendship between Dr. Iselin and myself. Thank you.

Tokyo

Koji Hidaka

IT is indeed surprising that Iselin is gone before me. Of course, he is to be associated with Bigelow, as having been his right-hand man. How different they were! I think of his husky voice and his quiet smile with so much expression in it. Will there be a photo to show it? He seemed to have so much strength in reserve as to be able with firmness to "sit on the lid," as Bigelow called it, of the boiling cauldron of the Institution they started. The name "Columbus" surely fitted him.

I always hoped to see more of Iselin, greatly enjoying our chats on objectives, a matter of common and great interest. He took over the physical oceanography which Bigelow had so well started. He tried to elucidate the North Atlantic Circulation as typified by the adjacent Gulf Stream. While this seemed simpler than inshore waters, I wondered whether he really found it so. It seemed to become more and more complex. I never had a good chance, with so many other things to think about, to learn from him what might have been responsible for the unusual amount of Gulf Stream water, as typified by Salps, in the Bay of Fundy in the summer of 1951, a more peculiar condition there in Passamaquoddy Bay than in any other summer of my experience.

He well supplemented Bigelow by trying to get the basic factors of the main oceanic phenomenon on the doorstep of the Institution.

A. G. Huntsman

Toronto, Canada

MY association with Columbus extended over some 30 years, never really close but always on my part with the feeling of a slightly difficult son toward a strong and kindly father. My earliest recollection of his kindness concerns a time in the 30's when we were oiling some galvanized wire on the 'Asterias' at the dock on a hot summer day. As the lowliest member of the crew, I was sent to get a bucket of oil from a drum lying on a rack on its side. As I pulled the bung, the heated waste oil shot out and covered me completely. With a mild "damn!"; I managed to plug the



His quiet smile with so much expression in it.

flow and returned to the 'Asterias' full of apologies for a job ill done, expecting to be berated for my carelessness. Columbus looked me over and said, "Any man who can keep control of himself as well as you did up there doesn't need to apologize. Go get yourself cleaned up. We'll take care of the rest." In all our infrequent contacts over the years, Columbus offered his thoughtful and kindly advice just as he had done then to an undeserving crewman.

William S. Butcher
Boston, Mass.

Salute to Columbus Iselin on the occasion of the presentation to him c

I AM pleased to be asked to speak about Columbus Iselin as a man, although I realize that whatever I can say will be inadequate. Columbus has towered over most of us physically and in many other characteristics. I think you should have assigned two or three persons to this task instead of one. I am reminded of our early days of skiing in New England when we used to poke fun at one of our number by saying, "It takes three people to watch Ted ski, one to say 'Here he comes,' a second to say 'There he goes,' and a third to say 'Who's dat guy!'"

In my assignment for today the only excuse I can think of for my being the one to attempt to tell you "who is dat guy" is that perhaps I have known Columbus Iselin longer than anyone else present.* It might be appropriate, then, for me to recount to you briefly some glimpses I had of his beginnings as a leader in oceanography almost forty years ago, and how the qualities which have made him so successful were already apparent in those early days.

We met in 1927 when, as an undergraduate at Harvard College, I was attempting to find an opportunity to study biology in nature, not just in the laboratory. I had been referred to Prof. H. B. Bigelow and he introduced me to a beginning graduate student who was planning a summer cruise, and who might be willing to take me along. Later I shared a table with Columbus in the room for graduate students on the 4th floor of the Museum of Comparative Zoology. In those days one-half of a table was all the space available for a graduate student. Dr. Bigelow had been quick to realize Iselin's potentialities as a future oceanographer, and was encouraging him to push ahead in this field.

I soon discovered that Iselin had become a man at an early age. Already, as an undergraduate, he had designed, built, and skippered a 78-foot schooner christened the 'Chance'. Coming from a yachting family, Columbus had acquired much experience with boats, but he had decided that he wanted to do something more substantial than merely cruising for pleasure. In the summer of 1926 he organized a group of college friends as crew for his schooner, and explored the coast of

Labrador. In spite of icebergs, treacherous currents, and the vagaries of the compass in that region, Columbus made an impressive start in obtaining hydrographic measurements in the Labrador Current and in collecting specimens.

The following year I was, indeed, fortunate enough to be included in the ship's company for Iselin's summer program. This consisted of an exploration of the coral banks off Bermuda and, particularly, the making of hydrographic sections across the Gulf Stream from Bermuda to Nova Scotia. When I returned home at the end of the summer, a local newspaper reporter who got wind of the cruise, sought to get a story from me about what he assumed had been our narrow escapes. He was much disappointed to learn that we hadn't had any. It was borne in on me then that our avoidance of serious difficulties was due largely to the competence and foresight of our skipper.

Columbus' qualities of leadership were thus apparent in his early cruises, and continued to develop and emerge as he undertook more and more exacting tasks. The following year he attempted successfully to obtain bottom cores along with hydrographic data on his cruise to Europe and back in a new 98-foot schooner.** In 1931 he was made Captain of the Institution's new 142-foot ketch, the 'Atlantis.' He was in command of 25 men, many of them his senior, and responsible for the full oceanographic program for the maiden voyage of the ship from Plymouth, England to Boston. Since the ship carried no radio and had no doctor on board, the young captain was definitely on his own during the 41 days at sea.

Realistic planning

Ability for realistic planning was one of Iselin's characteristics. In the early work at sea in which Columbus took part, each operation was thought out and discussed in advance to anticipate possible trouble with the equipment or danger to the personnel. The same foresight went into the planning of successive cruises, and later, when he became Direc-

*Except for Bill Schroeder and Mary Sears.

**Originally christened 'Atlantis', this schooner's name was changed to 'Ramah' by her new owner, Dr. Alexander Forbes, so that the Institution's new ship could retain the name 'Atlantis'.

the Bigelow Medal on June 22, 1966

tor, into the program of the Institution. During World War II when the Institution's effort was directed toward research for national defense, and all of us on the staff were working all-out at various projects, I remember Iselin's saying one day, "There should be more of us sitting around just thinking." Another example of his far-sightedness was his early recognition that efforts to increase the productivity of the sea, as for example by fish farming, would come to nothing, if the legal aspects of who owned the fish, or other product, were not established. This is one of the points he made in his address at the First International Congress of Oceanography in New York in 1959.

Other characteristics of Columbus which were apparent from the early days, and have continued to make him a great leader, are his selflessness and his encouragement of others. His attention has always centered on the objectives of the project. I have never known him to give a thought to his own comfort or to the recognition of his own efforts and ideas. The most dangerous jobs he took on himself, such as descending through a manhole to get a demented man out of a coal bunker in the old Albatross; or climbing to the very top of the 'Atlantis' 135-foot mainmast while at sea to tend an instrument. Nor did he ever lack courage to set out into the unknown, either at sea, or in the areas of research, or administration. His enthusiasm to forge ahead is contagious. He has supported new ideas, thought things could be done, and that **you** could do them. A colleague or subordinate came away from a discussion of plans with Columbus feeling strongly supported, if not inspired. He has often been able to see hidden talents in individuals with little or no scientific education, and through his generous encouragement, some of these eventually attained outstanding achievement in oceanography. It is no wonder that Columbus has so many devoted friends and associates today. I am one of many who has the strongest personnel regard for him. Foresight, farsightedness, selflessness, and sincere encouragement of others have produced a great leader in oceanography, and these are the attributes of the man we honor today.

George L. Clarke

Cambridge, Massachusetts



G. L. CLARKE

Columbus on the 'Chance'

Many of us have clear-cut ideas about ways by which the oceans could be exploited and at the same time become more useful to mankind. It is time that the lawyers and the statesmen go to work so that these achievable improvements in the overall economy can become a reality.

The sea is the only part of the earth that nobody claims to own. The old idea of the freedom of the sea has well served its original purpose. It arose because until now the most important characteristics of the oceans were that they provided for cheap world-wide transport and for national defense. I am afraid that the idea of the freedom of the seas is somewhat incompatible with their efficient and wise exploration.

The economic and social problems that will be encountered as we begin seriously to exploit marine resources seem to me formidable, much more formidable than the remaining unsolved scientific problems. I hope that it is significant that during the last 10 days our discussions have been held at the United Nations. Some very wise agency needs to be developing the ground rules within which the vast marine resources can be developed in an efficient and safe manner for the benefit of all mankind.

C.O'D. I.

From Oceanus, Vol. VI, No. 3, March 1960

"RISKING"



THOSE of us who were privileged to be associated with Mr. Iselin during the war years know how much he gave of himself. Time and energy on his part were of no object. He exerted both to the extreme.

In those days several of us were commuting daily from the Vineyard and we got to know each other better than just a nodding acquaintance. Under trying circumstances we got to know how each would stand—we were all on the same level. He never failed to measure up.

He spent much time in Washington during those hectic years and I have seen him come back from conferences completely exhausted, throw himself into a corner of the boat, and just "sit it out" all the way home. He grew older with every trip and although we had no idea how tough it had been, we knew enough to realize that not only had it been physically a rough session, but that he had been called upon to make some mighty important decisions that would affect very substantially certain phases of the war. When he spoke, men of high rank listened until he was through. Nobody knew as much about certain phases of the ocean, and the military needed his advice.

Many nights he would be detained in his office in Woods Hole until seven-thirty or eight o'clock holding conferences by phone with Washington. Or maybe some high official from our allies in Europe would be in his office. When he would finally appear, he would apologize for being late and for delaying us; this from a man to whom generals and admirals listened.

I had the privilege of driving him home on the way to my home at Menemsha practically every night during those years so we had something extra in common. He always talked about boats and fishing — things I understood and had been

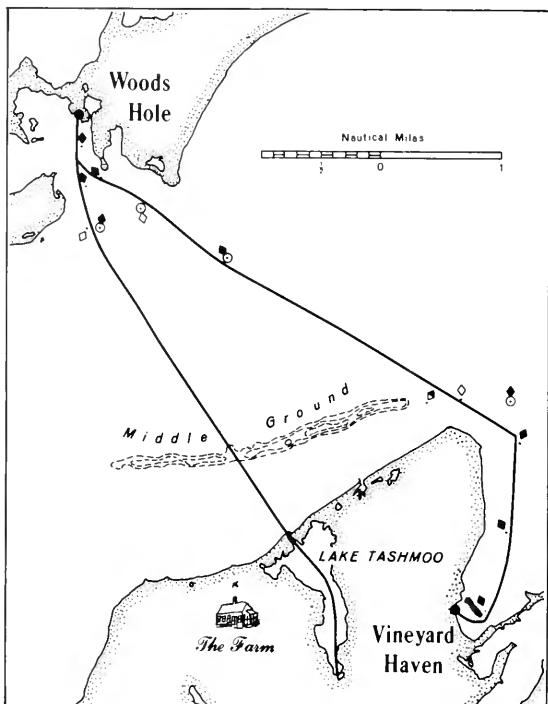
associated with; never about big things going on in oceanography of which I had very little if any understanding. When one talks your language, you appreciate him even more.

Mr. Iselin was known by most people as a great oceanographer as indeed he was, but to us whom I feel knew him rather intimately, he was a great man. His passing ended an era for a few of us.

Stanley E. Poole
Menemsha, Mass.

MY acquaintanceship with Columbus started through his offer to give me a ride to work, while I was a graduate student. The vehicle, of course, was the 'Risk' and the route; Tashmoo Pond to Woods Hole and return. There were many of us who shared this particular aspect of Columbus'

Alternate tracks of the 'Risk' show that in wintertime early dark, in fog or in storms it was quite a task to avoid hitting an unlighted buoy or go aground on Middle Ground. Tidal currents of 3-4 knots are to be reckoned with.



generosity, and many distinguished guests of the Institution were treated to unanticipated and, perhaps, unwanted experiences if they happened to accompany us on a return trip across the Sound after the southwest wind had a chance to work up for a bit.

Over the course of several years we made many crossings. Typically, we would all be closeted in the small cabin where Columbus would contentedly puff on his cigarette either reading or keeping up a running stream of conversation. It was during the short period of years, when he was serving as the Director of the Institution for the second time, that I particularly remember these voyages. At that time, he had asked me to serve as his assistant; I learned quickly that there were certain practical problems associated with this position.

Simply disappeared

When Columbus was in residence at the Vineyard, his normal regime upon setting foot on the Woods Hole dock in the morning was to collect a copy of the New York Times and retire to read its contents. Following this, and I assume the handling of those matters which were thrust to his attention by anyone who happened to be close at hand, Columbus would then simply disappear. He had an insatiable curiosity to know what was going on around the Institution, and he prowled into every corner. This characteristic had a salutary effect on the morale of the staff and was a clear testimony to Columbus' interest in his chosen profession, but unfortunately it had the consequence of leaving his young assistant to his own devices.

My saving was, of course, the fact that I rode to work with the boss. In addition to providing a constant seminar on all aspects of Columbus' interests my rides with him on the 'Risk' also provided a tutorial on how I ought to be discharging my job. Although this was perhaps an unconventional way to transact Institution business, from a personal point of view, it was a marvelous way to start a career.

Richard G. Leahy

Cambridge, Mass.



Captain Poole at the wheel of the 'Risk'

MY earliest contact with Columbus Iselin was in the summer of 1939 when I came to Woods Hole. My first impression of him was that of a tall, lanky individual who each morning in his motor launch would slip in from across the Sound and his home on the Vineyard. Even on the days with the thickest blanket of fog hanging over the sea, his daily schedule never varied and his arrival could be used to check the clock. I became more directly aware of and appreciative of the man when I took his course in descriptive oceanography in the spring of 1940 at Harvard. This was my introduction to the dynamics of the oceans as known at that time. Many of the basic principles in oceanography that he described in those early days have stayed with me and are still quite frequently used in presenting basic principles of oceanography to young people today. And as my first impression was one of him arriving by sea from across the Sound, my last one was this past June, the day of the 40th Anniversary celebration at Woods Hole. I was fortunate to have been there and following Columbus' address, he went down to the dock and boarded the boat for the return to the Vineyard. Shirley and I were on the dock at the time and as the boat pulled away, he acknowledged our farewell with a lift of his hand and his broad smile.

Charles M. Weiss
Chapel Hill, N.C.

Don't bother about Radcliffe girls . . .

ABOUT Columbus' scientific life, I know next to nothing, but he gave advice to many people, both high and low, including me. When I first went cruising to Maine and Nova Scotia, aged 17, which was the same age as he had been when he first went to Maine in a Victory class racing boat named 'Flapper' with Terence Keogh, he gave me the best simple list of do's and don'ts for the New England Coast in summer. Here it is: "Start early in the day, come in early. Go east as fast as you can because, remember, you will have to beat back. If the SW wind increases after sundown, it will blow hard all night. In calm weather, there is usually an offshore breeze after midnight. Become accustomed to navigating with a lead line. It is your surest and best friend."

When I went to Harvard, he told me the following: go to class drunk or sober. You will learn more if you go than if you take "cuts." Don't bother about Radcliffe girls: there are no pretty ones. (This was in 1932, not 1971). And what now seems to me very odd sartorial advice, "wear a hat."

My father died when I was 13; so, Columbus was in many ways my father. I think the only time that I impressed him was when he came to see me in Boston when I was commanding officer of the U.S.S. 'Atherton' (the D. E. 169) during World War II. He watched me move her from the East Boston Yard to the South Boston one with the aid of tugs—her main engines were down. He said "I am sure I could dock her, but not with tugs. I've never done that."

Columbus once said to me, "You are fortunate as an artist because you deal in magic. We scientists have only reality."

One last thing: when sailing to windward, he had a tendency to "pinch" a little, but he had a great hand off the wind, which is really harder, particularly in light air.

I miss him. And so would Terence and Tom LaFarge and John Churchill, and the rest of them who went to sea in the old days..

Lewis Iselin

— what now seems to me odd sartorial advice, "wear a hat".



NORA ISELIN

When Columbus wore a hat it always was the same model.

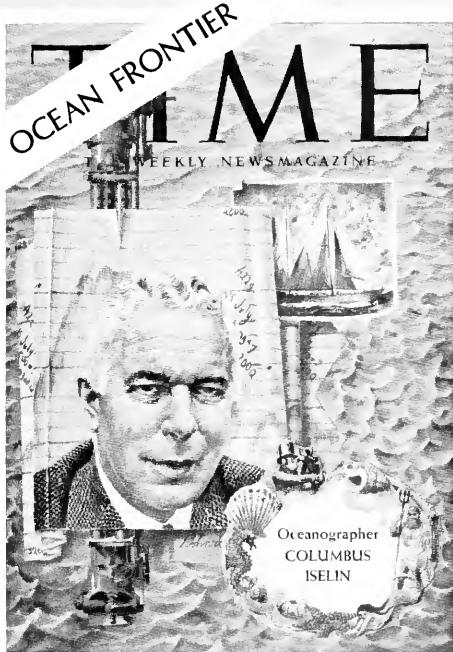


G. L. CLARKE

It couldn't have been the same one through the years.



Either he had bought a supply or had a hatter who manufactured a new one occasionally.



When TIME did a cover story "Ocean Frontier in 1959, Columbus and the 'Atlantis'" were chosen for the cover. In the July 16, 1928 issue of TIME a photo showed young Iselin above a 1½ column of text about his investigation of the Mid-Atlantic Ridge on the schooner. 'Atlantis.'

Stuffy Iselins

I DON'T think anyone realized how much Columbus would have preferred to be on active duty with the Navy than in his job at Woods Hole. He was really interested in his job, of course, but he also would have liked to do the other. I used to think at the time that he was silly to think that way, but I realize now that it must have been a certain strain to have your friends and relations off in the war while you were in an executive position at home, and after Howard Lapsley and Tom LaFarge were killed, I know he did mind.

He was such a dear with us, and had a great sense of humor about the stuffy Iselins of which there were far too many in the pre-war days.

We both miss him a lot.

Sally Iselin
New York, N. Y.

He was a true seaman . . .

COLUMBUS commanded respect wherever he appeared, in whatever company. With larger ships, with expanding programs, and particularly increased specialization it will be a rare man, if any, that ever matches his universal coverage of the science and the art of ocean research, and of seamanship or his familiarity with the total literature, the researchers themselves — and, not least, the sea itself.

Whenever I saw Columbus near a boat, I had the feeling that he was a true seaman — the man, the boat or ship, and the water seemed a unit, belonging together. I was impressed with his daily trek from his island home across to his waterfront institution, and one day I asked him how he maintained his record of crossing such a difficult navigational stretch day in and day out, without fail, come wind, snow, fog, or what have you? "Well, I look over the side, and the look of the water often tells me about where I am." He smiled his own distinctive smile, but the back of his hand was hardly less familiar to him and certainly was less carefully noted than the swirls and the currents around the Hole.

Columbus made outstanding contributions to the awareness, acceptance, and support of oceanography in many significant quarters. Its present stature owes much to him. It is notable that he could do what he did and remain so quiet and retiring and that he could build around him and inspire a group that accomplished so much with his leadership but with complete informality and camaraderie rather than formal management or discipline. The genial yet productive atmosphere of his staff reflected his personality.

I often envied those of his associates who were qualified and privileged to work closely with Columbus in the atmosphere of the early days of the Woods Hole Oceanographic Institution. I shall read with great interest the comments of those who knew him from such close association.

Raymond Stevens
Boston, Mass.

Some Early Cruises . . .

I FIRST met Columbus in 1925, just out of boarding school, when fog-bound for several days in Isaac's Harbor east of Halifax while cruising with my father on the Nova Scotia coast aboard his little Malabar schooner, 'Mary Ann.' Columbus, an undergraduate at Harvard, was also fog-bound in the same place aboard that charming little Maine smack schooner, 'Theresa White.' He bought the 'Theresa White' from my uncle, Nathaniel Emmons, who bought her at a government auction after she had been captured by the Coast Guard while running rum. It was the prohibition era and Columbus had an undergraduate crew also including his boyhood friend, Terry Keogh, who never went to school or college. The crew were sure hitting the booze while anchored in the fog and then I realized what a great leader Columbus was because he kept them under control and was able to get them out of their bunks to get the anchor up when the fog finally cleared. He continued on to Newfoundland and, I believe, even at that early age accomplished useful oceanographic work.

Terry again

When I was at Harvard, I saw a good deal of Columbus cruising or racing aboard various yachts. I think he skippered the schooner, 'Rose of Sharon,' down in the 1930 Bermuda race. In Easter vacation, 1928, he asked me to help sail that lovely Woods Hole schooner, the first 'Atlantis,' on her maiden voyage from Shelburne, Nova Scotia, to Woods Hole. It was late March or early April, as I remember, but anyway damn cold, snow all over in Shelburne. The night before we left; Columbus got a keg of rum off a wrecked rum runner, mixed up a punch, and gave a party for all the males in Shelburne. It was some party but I could see what a humorous, gracious host he was and how popular and beloved he was there by men from all walks of life. Of course, his friend Keogh ran the yard where 'Atlantis' was built. I think Columbus put him in that remote job to

keep him out of trouble. I could see why Columbus liked him so because he had a marvelous Irish sense of humor and was a thorough seaman. He used to get extra drinking money by fighting preliminaries all over the Province.

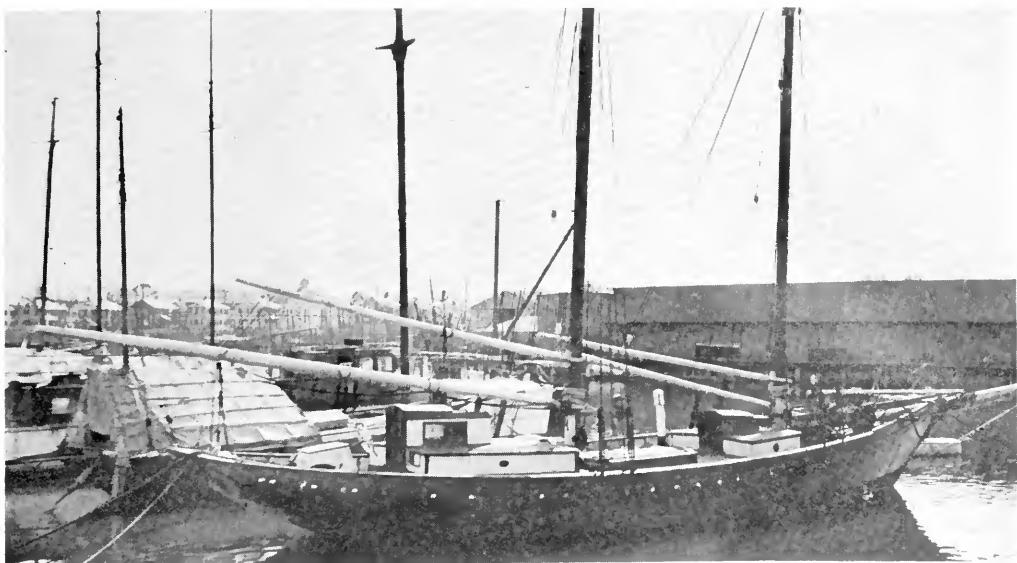
We put to sea and ran into a bad easterly gale, freezing snow, and real rough in the Gulf of Maine. The rigging all slacked up and the masts looked as if they would go out of her the second night. That was when Columbus showed what a magnificent seaman he was, putting her to rights. She was a wonderful, fast, sea kindly schooner and Columbus was mainly responsible for her design and layout.

Wave tests

I was at a loose end when I got out of the Navy in January, 1946, and Columbus gave me a job as liaison man between the Navy and the team Woods Hole was sending out to measure the heights of the waves the atom bombs made at those first tests at Bikini. I may say it paid better than the Navy. I spent most of February and March before we took off at Woods Hole, trying to help test the instruments. Spent a lot of nights on the Vineyard with Columbus and Nora which was a privilege, indeed. When I heard him discussing and arguing with Allyn Vine how the wave measuring instruments should be made and operated, I realized what a great scientist he was from both a practical and theoretical point of view, although all their conversation was completely over my head. I have to admit however, that I was astounded when the infernal looking machines Iselin and Vine devised actually worked, lying on the bottom of Bikini Lagoon when they blew up the bombs.

My last hook-up with Columbus was in 1960 when I sailed my Concordia yawl, 'Winnie of Bourne' from Bermuda to Portugal and kept a pretty detailed water temperature record for Woods Hole enroute. It gave a little point to the voyage and certainly gave the crew plenty to yak about. Typical of Columbus, he made me feel as if I had accomplished a major scientific feat when I handed the record into him. I end by saying Columbus Iselin was a hero to me all his life.

John Parkinson, Jr.
New York, N. Y.



The schooner '*Theresa White*', in which Columbus made a cruise to Nova Scotia in 1925, had been a rum runner during prohibition days. Lying at City Point, Boston her huge mainsail boom shows that she was a 2-master, the 3d mast belongs to another vessel.

Yacht historian John (Jack) Parkinson Jr. on board his beloved 'Winnie of Bourne'.



Lunch at Cap'n Kidd

I CAME to work in the Office of Naval Research in late 1949 as a temporary replacement for Gordon Lill who was on six months' leave of absence. My task was to "run" ONR's program in oceanography, geology and geophysics. Although life was simpler in those days, apparently even ONR had some reservations about the arrangement and Joe Worzel came down from Lamont about one week a month to help out on geology and geophysics. Oceanography, however, was all mine. Soon after I arrived I was told that the best way to find out what was going on was to get out of Washington and talk to those doing the work. My first visit was Woods Hole where I had never been and my host was Columbus Iselin whom I had never met.

Dr. Iselin met me at the train station, bought me lunch at the Captain Kidd, and was with me most of the day. He was kind, helpful, and most tolerant. How tolerant I'll probably never know, since time mercifully blurs many memories. But I do remember him showing me around the lab, introducing me to the staff, and explaining what it was that Woods Hole was doing and why. There was no need for him to do so. In actual fact I was not running anything at ONR and no one knew that better than Columbus Iselin. But Columbus apparently felt that if I was ONR's representative, I should be treated like one and I was. It was a great boost to both the morale and ego of a very nervous young man, and I have never forgotten it.

John A. Knauss

Kingston, R. I.



Holding forth or intently listening

Air-Sea interaction

I FIRST met Columbus when I was a meteorology student at M.I.T. during the early 1930's. Columbus attended some of the meteorology seminars and occasionally was the speaker—always illuminating and delightful.

He was quite able to field technical questions from the attentive and critical audience, 95 percent of whom were meteorologists; but on one occasion when he lectured on the Gulf Stream he seemed at a loss for words to answer the first question, which happened to be raised by a Weather Bureau official. The unexpected question following his scholarly presentation was, "Dr. Iselin, I enjoyed your talk very much, but can you tell me where to find the best fishing in that area?" After a lengthy pause, Columbus just flashed his winning smile, the audience laughed, and then posed questions more appropriate to the Gulf Stream's physical oceanography.

Columbus was never a cold person. I always felt comfortable in his presence whether at meetings, in committee, in his office, or socially. He always had a way of expressing physical ideas in a concise, yet not oversimplified, form. In this way he had a strong and good influence on his contemporaries and students. In my case he continually encouraged my attempts to learn more about air-sea interaction. This encouragement was heartening in the late 1950's, especially since many meteorologists were switching to satellite cloud studies, numerical weather prediction, air pollution, and other important topics in which air-sea interaction *apparently* had little relevance. Fortunately, as Columbus foresaw, there is much relevance. The editors of TIME were indeed wise to have selected such a central figure in oceanography for their cover story in 1959.

Jerome Namias

La Jolla, California

A tall, shy young man

MY Association with Columbus began in the spring of 1927 when a tall, very shy young man called at my laboratory in the Federal Fisheries building in Woods Hole and handed me a letter of introduction from Dr. Bigelow, with whom I collaborated since my student days. The purpose of the communication was to relate that young Iselin was preparing for a cruise in the Labrador Current and desired to conduct some oceanographic observations. To this end H. B. asked that, if possible, arrangement be made for an operational demonstration of the Greene-Bigelow reversing water bottle, at that time standard equipment in ocean investigation. That afternoon on the Fisheries' vessel 'Phalarope,' commanded by Captain Bob Veeder, we operated in Vineyard Sound, arranged the loan of required apparatus for use on the 'Chance,' and I launched cooperative relations which endured thereafter.

Later, in the development of the graduate student program of the Narragansett Marine Laboratory, Columbus generously participated as a regular lecturer and arranged annually for the services of other members of his scientific staff to round out a balanced curriculum, until the URI Graduate School of Oceanography attained sufficient size to handle the job itself.

The honorary doctorate subsequently awarded to Columbus by the University of Rhode Island was well deserved, but at best could not adequately express the magnitude of his services or the appreciation of the Narragansett Laboratory for those contributions.

Charles J. Fish
Kingston, R. I.

A hard struggle

Cowboys and Indians

OFTEN it's the little things that stick with you when remembering a great man. Soon after the National Academy of Sciences Committee on Oceanography (NASCO) was formed in 1958 (Columbus was a charter NASCO member) I came up to Woods Hole to ask him about some of the major issues confronting oceanography. Columbus had a special sense of concern for the importance of ocean understanding to our national security. That the defenses of our nation should depend upon detailed knowledge of the ocean environment seemed obvious to all of us — so much so that it was difficult to find the best arguments to make this fact clear. One afternoon in Columbus' sunny office overlooking Vineyard Sound we were searching for an analogy on this point that might help the layman reader of the forthcoming NASCO report. The conversation swung to the advantages that one familiar with his own territory might have over an adversary. Perhaps, the home team might enjoy some advantage over the visiting baseball team? As it turned out, data from several years did show that home teams had won more games than visiting teams, but the advantage was too slight to be convincing. I then suggested that, in early American times, Indians (intimately familiar with the local landscape and forests) were able to win many battles though they eventually lost the war to "modern" technology and superior firepower.

Over the next few months Columbus used this analogy several times in discussions with laymen, congressmen, and top-level administrators. To the best of my knowledge, each time he used it (whether or not I was present) he took pains to give me credit for the thought. There are many marks of a great man. One is his ability to recognize the contributions of others. This was a quality that Columbus had and that I have since tried to emulate.

Richard C. Vetter

Washington, D.C.

COLUMBUS ISELIN greatly influenced my career and that of many others through a conversation I had with him during the war years. We met 40 years ago when the newly launched 'Atlantis' put in at Plymouth, with Columbus as master of the vessel. With a number of the staff and other visitors at the Marine Laboratory, I was able to make the acquaintance both of Columbus and of the vessel during the week or ten days they were preparing for the Atlantic crossing. My own contact at the time was limited to a few brief conversations.

Two years later I visited Columbus at Woods Hole while on a two-year post-doctoral Commonwealth travelling fellowship. For the next five years I saw very little of him, since I was working for various British governments on West Indies fishery problems.

My next contacts with Columbus came when I accepted a position on the University of Miami faculty for the purpose of establishing a marine laboratory. After two years of frustration it seemed that to fulfill such an ambition in what was then a small, ill financed and not very distinguished university would be a difficult if not impossible task. Many other friends advised me to leave and seek a position at an established institute such as Woods Hole. Columbus, however, strongly urged me to undertake a hard struggle to achieve the objectives at Miami. He pointed out that there was no tropical marine research institute anywhere on the continental coasts of the U.S.A., that Miami was located closer to the Pacific tropical coasts of South America even than Scripps, and that this unique situation could eventually justify any initial hardships involved. It is no exaggeration to say that his enthusiasm and vision and his friendly interest and encouragement were the deciding factors in founding the School of Marine and Atmospheric Science. I am happy and I am sure that all of my colleagues are equally happy to acknowledge with gratitude the important part he has played in our careers.

F. G. Walton Smith

Miami, Florida

January, 1931

The New Oceanographic Institute

BY C. ISELIN

Assistant Curator of Oceanography, Museum of Comparative Zoology, Harvard University.

The reader can now see that a good oceanographer should be both a seaman and a scientist. In much of the work which needs to be done at sea, a knowledge of engineering is also important as special instruments have to be developed that can withstand hard usage on shipboard and the corrosive effects of salt water. It is obvious that Tech men can be of great assistance to this undertaking and it is hoped that many of them will take an active part.

Go forth and be like Columbus

COLUMBUS O'DONNEL ISELIN was an unusual man in many respects, and some of his finest personal traits became evident when he assumed the role of a teacher. So naturally and effectively did he teach, that he was as likely to leave an impact on an informal group of coffee drinkers, or a crew aboard ship, as he was to stimulate the members of a formal class. He taught as much by example as by speech, and his stories of the sea convinced his listeners that he loved that realm of nature above all others.

The oceanographic part of M.I.T.'s present program in the earth sciences could not have started and then developed the way it did without the help of that incomparable quintet from Woods Hole—Iselin, von Arx, Hersey, Stommel, and Malkus. And of these, Columbus stood first, because he came early to help us get instruction started, stayed on to help guide our academic program, and continued even after retirement to provide a subtle but definite influence that motivated more than one student to do a better job than he would have done otherwise.

It was one of the strengths of Columbus that he never needed to raise the decibel level of his voice in order to be heard or understood; so gently, yet so firmly and logically, did he present an idea or express an opinion that it was rare to hear disagreement with him. Although courteous and considerate, at times almost to a fault, he

never left his audience in doubt as to what he thought or where he stood on an issue, but this was done with a disarming gentleness and humility that belied the firm conviction that he had reached only after long and careful thought.

His was not the rapid and facile rhetoric of the glib lecturer; rather, he seemed to carve his phrases out of a complex of thoughts, but they came out loud and clear. His ideas, his theories and hypotheses, his explanations, all could stand alone by their logic and clarity.

Thus he taught an informative and convincing course, and conveyed to his students a strong sense of enthusiasm for the sea and devotion to the profession of oceanography. Perhaps the best indication of how deeply he felt his responsibility for meeting his classes was the fact that only the foulest of weather could keep him from making the long trip from Martha's Vineyard to Cambridge.

Being deeply sensitive, and having great compassion and respect for people, it was natural that Columbus was so often sought out for assistance and counsel, both of which he always gave cheerfully and in good measure. And perhaps the greatest single impact he made on his students and peers was the desire generated in them "to go forth and be like Columbus."

Robert R. Shrock
Cambridge, Mass.

WHEN you asked for remembrances of Columbus, I thought I would see if there was anything in my notes from Geology 136—Physical Oceanography—which I took the last year he taught it. There was, his opening statement to us, “Oceanography isn’t a science at all.”

Richard Haedrich

Woods Hole, Mass.

HE was one of the founding members of SCOR and played an important part in initiating the International Indian Ocean Expedition, activities in which I played a later role, but by the time I came to them, Columbus had gone to something else. I remember him principally, in our rare encounters, as a challenger of conventional wisdom, and a proponent of a fresh and realistic point of view. It is my loss that our contacts were so limited.

Warren S. Wooster

La Jolla, California

I NEVER have seen nor heard of the partially finished letter addressed to me and written during his cruise from Capetown to Woods Hole on ‘Atlantis II.’ I would love to have it. Very few “Owners” would bother to write the designer giving their thoughts and suggestions regarding a new ship. But then, there are very, very few Columbus Iselins.

Lester Rosenblatt

New York, N.Y.

. . . had numerous battles

THE death of Columbus Iselin was a personal loss as well as a loss to all of us concerned in any way with understanding the oceans.

Columbus and I had numerous battles. Yet, I think I enjoyed our differences more than I do my agreements with most people. For a number of years Columbus Iselin was Chairman of the National Academy of Sciences Committee on Oceanography (NASCO) Panel on Ocean Wide Surveys while I chaired the comparable federal panel of the Interagency Committee on Oceanography. NASCO had recommended that the Navy and Coast & Geodetic Survey undertake systematic surveys of the deep sea. We in Washington, under considerable obstacles, began the operation in the North Pacific in 1961. Although NASCO had recommended such surveys, Columbus saw in them a threat to the more research oriented activities of the private institutions. His feeling was that there was only so much federal support for oceanography and the more that was drained away in surveys the less there would be for research at the private lab-

oratories. It was a long battle to convince Columbus that it was not an either-or situation but that funds for surveys would not otherwise go to research. He had serious doubts about the science to come from such systematic surveys, and he caused me many an uncomfortable moment at NASCO meetings. An indication of his true greatness was a letter he wrote to me in 1967 in which he complimented the federal government on the science that was beginning to immerge from the SEAMAP program in the North Pacific. It takes a really big man to do this.

Foremost at all times in Columbus’ mind was the science of the sea and if he felt that money was being spent which was not producing good science, he was anything but reticent. When he saw that good science was being produced, he was quick to say so. His incisive comments and his deep love for the sea will be sorely missed by all of the “sea people” of whom he was one of our great leaders.

Harris B. Stewart, Jr.

Miami, Florida

*Returning from the
IGY section along 16° South,
Fritz is hugged by
his daughter Betsy*



Once upon a time . . .

THINKING back over the last thirty years, the period during which I knew, admired and worked for and with Columbus Iselin, I am struck by one fact. In spite of our close relationship and almost daily meetings, there was a number of contacts, that are usually routine between associates, that never occurred with us — or happened only once in all those years.

It is well known that Columbus did not use the telephone casually or often, but in my case I can state positively that Columbus called me on the phone only once in thirty years; I never called Columbus.

Once, when I stopped in St. Helena (16°S. Lat.) with the 'Crawford' on the first International Geophysical Year (IGY) cruise, I received a letter from Columbus. He wanted to let me know that we had run out of IGY money but, since I had gotten so far away, I might just as well go the rest of the cruise. I once wrote Columbus a letter which he did not answer either.

Once, just the two of us had dinner together. It was in Copenhagen at a very nice fancy place on a hill overlooking the water where, Columbus said, they had celebrated the commissioning of the 'Atlantis' years ago. The shipbuilding firm had thrown quite a party at that time; our meal, though very nice was Dutch.

Once, Columbus spent the evening at my house; a blizzard was raging and he could not get back to the Island. He did not spend the night because he knew of another place where the beds were longer. I never visited Columbus' home. I came close to doing it once when I met him on the train going to Boston: I was on my way to Washington, D. C. and he knew that I would have several hours to wait for the Federal so he invited me to stop at his home in Milton. I was delighted at the idea but then I remembered, with disgust, that the editor of OCEANUS had given me an important package to deliver to someone who would meet the train in Boston. I should have forgotten it under the seat, or something.

Once I was on a plane with Columbus. Well, I guess you can say I was with him; it was a flight from Copenhagen to Helsinki and I had met Columbus, Roger Revelle, (Sir) George Deacon and several others in the airport. I was talking with Roger as we boarded the plane when I became aware that some passengers were in another line going into the tail end. You can imagine my embarrassment when I realized that I was flying first class while Columbus and Deacon were pigging it back in steerage; I had a hard time gulping down my champagne and caviar.

For years I looked forward to the day when I would accompany Columbus on an oceanographic cruise but it never came. Once, when the Iselin Building and dock were dedicated, I had the honor to be with him coming and going across the Sound.

Once upon a time I wrote a paper with Columbus.

Woods Hole, Massachusetts

F. C. Fuglister

Gulf Stream Papers*

If one scouts the offices of the Institution for copies of "Papers in Physical Oceanography and Meteorology" (P.P.O.M.) Volume IV, No. 4, what he is most likely to find is a bedraggled, dog-eared pamphlet, coming apart at the seams, held together with scotch tape, pencil marked on margins, text, and diagrams—a pamphlet showing the signs of extensive and repeated use and reference over a period of many years, actually to this very day. This document, titled "A Study of the Circulation of the Western North Atlantic" was dated August 1936.

In the last pages of the document, its author, Columbus Iselin, first master of the 'Atlantis' and progenitor of this research, articulates the first tentative answers to his own large questions in trenchant phrases.

With the benefit of 30 years of hindsight, Columbus would probably love to alter a number of statements and improve a few diagrams, but that is neither here nor there. The use that this document still receives and the viability, to the present day, of the research tradition it initiated, amply attest to the significance of the work and the influence it has sustained. Every present day physical oceanographer finds aspects of this scientific inheritance in his knowledge, his outlook, his entire frame of reference for generating new questions about the processes of the ocean.

Among the questions that currently seem to be most challenging and important to theoretical oceanographers are questions that have to do with the origin, dynamics, and influence of transient effects in oceanic circulation. It seems likely that a next level of conceptual understanding of oceanic phenomena will come in this realm. But theoretical hypotheses and syntheses develop fruitfully only under the guidance of observational facts. Columbus Iselin began asking about the relevant observational facts in the paper quoted above. He apparently had an

intuitive, instinctive grasp of their importance, and he continued the inquiry in another P.P.O.M.; "Preliminary Report on Long-Period Variations in Transport of the Gulf Stream System."

The synthesis is yet to be attained. More observational facts—in a variety of geographical areas—are still needed, but whoever works in this area does so under the benefit of Columbus Iselin's pioneering question asking.

T-S diagram

In 1939, Dr. Iselin published a three page paper in Transactions of the American Geophysical Union; its title: "The Influence of Vertical and Lateral Turbulence on the Characteristics of the Waters at Mid-Depths." This, paper drastically altered the view of oceanographers toward the significance of the well-known T-S diagram first used by Helland-Hansen around 1916. Counteracting then widely prevalent opinion, Iselin asks:

" . . . can the temperature-salinity correlation at mid-depths in the Sargasso Sea be explained by lateral turbulence, rather than by vertical turbulence accompanied by certain lateral mass movements at mid-depths [as is currently supposed]?"

Pointing to the one diagram appearing in the paper, Iselin says:

" . . . but if the fresher waters north of the Gulf Stream are excluded, all temperature-salinity curves of the surface layers in March more or less follow the mean vertical temperature-salinity curve for the Sargasso Sea. In other words, the temperature-salinity correlation of the surface layer of the North Atlantic in winter is not very different from the vertical salinity curve in mid-latitudes. This fact, of course, has been generally appreciated for some time."

The fact may have been generally appreciated, but the interpretation Iselin placed on it was new and immediately influential. In Chapter IV of the Gospel according to Sverdrup, Johnson, and Fleming*, one finds the following paragraph:

"The Oceans", Prentice-Hall, 1942.

*This is an abbreviated version of remarks made during the 1966 presentation of the H. B. Bigelow Medal. (Ed.)

"Iselin (1939) showed that the horizontal T-S curve along the [surface of] middle part of the North Atlantic Ocean is very similar to the vertical T-S curve that is characteristic between temperatures of 20° and 8° over large areas of the North Atlantic Ocean, and he suggested that processes of sinking and lateral mixing are mainly responsible for the formation of that water. Extensive use of this concept will be made in the chapter dealing with the water masses and currents of the oceans."

And extensive use has been made indeed—not only by Sverdrup and his co-workers but by many others as well, including virtually every oceanographer here at the present time.

Uncanny ability

Many of us here today have had the experience of going to Columbus to talk over a scientific idea or a plan of research and in the process have experienced not only the enthusiasm and hearty encouragement he so unassumingly generates but have also encountered his uncanny ability

to "surround" a problem—to grasp it in the large and to set it and its implications in a wider perspective than we ourselves had established. It must have been from just this kind of framework that Columbus got the Navy early during World War II, to pay attention to the influence of thermal structure on underwater sound propagation. It must have been in a similar frame that he attracted and encouraged the group under Maurice Ewing in the work that led to the prediction and verification of the existence of the Sofar sound channel. It is clearly in the same vein that he has had his profound influence in the National Academy's Committee on Undersea Warfare and on the international research panels which he has served by the SCOR.

For these pioneering scientific achievements in oceanography, and for numerous more personal reasons as well, it is an honor, a privilege, and a very great personal pleasure to salute Columbus Iselin on the presentation of the 1966 Henry Bryant Bigelow Medal.

Arnold B. Arons
Seattle, Washington

He always seemed to say yes . . .

HOW does one acknowledge in public words the debt he owes to those without whose guidance his own career would not have developed? On the one hand, modesty (maybe my work will not turn out to be all that significant), on the other, ambition (if it's **my** career I must make it on my own) keep even from one's own inner self the truth about how much is owed, how crucial was the assistance offered, the suggestion made. I can only state as simply as possible that, without Columbus Iselin's help on two occasions a decade apart, my efforts to bring the understanding of the historian to bear on those least articulate among scientists, the oceanographers, would never have begun.

During my junior year, as I cast about for a senior thesis topic on which I could work in a summer spent in the Navy, I discovered first hydrography and then oceanography. A summer surveying in

Labrador showed me that the scientific content of the former was small, so in the spring of 1951, as I labored over a history of American hydrography in the early 19th century, I enrolled in Geology 136: Physical Oceanography, the course which Columbus taught at the Museum of Comparative Zoology at Harvard. Columbus' lectures were not inspiring—he was too shy to be theatrical in the classroom, but they were clear and straightforward. The course followed the outline of his volume in the Undersea Warfare series, concluding with a descriptive account of the new theories of westward intensification by Henry Stommel and Walter Munk. I did not do very well in the course, since most of that semester was swallowed up by my thesis, but Columbus did not seem to mind. He encouraged me to shift the subject on which I was to spend a Fulbright year in the Netherlands from historical cartography to the history of oceanography

and he gave me an introduction to Pier Groen at the Royal Netherlands Meteorological Institute, whose lectures at the Free University of Amsterdam I attended the following year. Armed with a copy of Henry Stommel's historical paper on the Gulf Stream, I set sail for Europe. My career as a historian of oceanography had begun.

In 1960 I was back at Harvard after sea duty in the Navy and study at the Scripps Institution, looking for the sponsorship necessary to permit me to write a doctoral thesis on the history of geostrophy. Columbus kindly agreed to sponsor me, and in the spring of 1961 he suggested that perhaps Woods Hole would be a good place to work in the summer. From that quiet suggestion dates the connection I cherish with the Institution and most of the writing I have done on the history of oceanography. That summer's work at Woods Hole laid the foundations for my continuing studies in the history of geostrophy, and I have been coming back every summer since to do research and write on this and other topics.

Fluid dynamics

Twenty years have gone by since I was first Columbus' student, ten since he brought me to Woods Hole. I had hoped that Columbus himself would sum up his career in the form of an autobiography, but, with the reticence typical of the sea-going scientist, he found it easier to write about others than about himself. I do not feel that I knew Columbus well enough, in spite of a close association, to say anything personal about him, but one particular aspect of his vision of oceanography stands out in my mind. Though he always stressed his early training in mathematics, Columbus was committed to empiricism as the source of our knowledge of the sea's motion. The oceanography he believed in was done from ships, with Nansen bottles, reversing thermometers, and the newer tools of our trade. What the oceanographer did on shore was to plot up this data and to try to make sense of it. In recent years when the theoretical and experimental work in geophysical fluid dynamics seemed to be bringing forth important advances in our understanding, Columbus insisted that nothing had been discovered which had not first appeared in empirical studies.

It seems to me remarkable that, given his feeling for the primacy of empirical oceanography, Columbus presided both as Director and as Department Chairman over the establishment at Woods Hole of the outstanding group in geophysical fluid dynamics. This breadth of judgment, this willingness to encourage others to venture along paths he would not tread himself, was I believe the source of Columbus' influence over oceanography in our time. In a world where most men are skeptics, where most proposals of work to be done are scrutinized with a jaundiced eye, Columbus seemed always to say yes. By letting others do what they chose to do he made them face up to themselves, to set their own standards and reach them if they could. He had the capacity to give people faith in themselves, and I for one owe my career to him.

In spite of his heavy commitments as a statesman of science, he was dedicated to teaching, to imparting to his successors his vision of a science of the sea.

Harold L. Burstyn

Pittsburgh, Pa.



Nansen bottle oceanography



D. M. OWEN

"Taking a BT" are the editor o/b the 'Atlantis' and C.O. Iselin Jr. o/b the 'Albatross III'



The Bathymeterograph

IN 1938, before Federal funds were available for research and development, I needed somehow to get my crude models of the Bathymeterograph built properly. In attempts to convince people, I waxed enthusiastic about my instrument pointing out that it could be used by fishermen and that every oceanographer in the world would want one. The president of one instrument firm replied, "Yes, all six of them!" I became pretty discouraged.

It was Columbus Iselin who not only saw the potential of the Bathymeterograph for oceanography and fishing, but who with his deep dedication to and knowledge of U.S. Navy problems, recognized the importance of the BT to underwater sound location of submarines.

By the summer of 1938 I had a crude, but workable, model. At that time the New London Submarine Base was conducting tests in the neighborhood of Guantanamo Bay and when the surface destroyer carrying the sonar could not detect the submarine, they attributed it to faulty equipment. Columbus and I were convinced that many of these misses in location could be due to the temperature gradient in the surface layers acting like lenses or prisms, and bending the rays away from the object to which they were directed. Clearly if a BT were let down by the destroyer they would be able to tell

what ranges to expect, when sonar conditions were good and when they were bad. Columbus arranged for us to go to sea in the summer of 1938 on the U.S.S. 'Semmes' from New London. We conducted the first exercises of destroyer vs. submarine using the BT. But the Navy was slow to adopt the instrument.

Shortly after the outbreak of war in Europe, the British were losing many ships to German U-boats, notably off the Straits of Gibraltar. Columbus was convinced that the U-boats were hiding from sonar detection beneath the strong thermocline in and near the Straits. With his help I met the British Naval Attaché in New York (more or less clandestinely because I was still a British subject and the U.S. was not yet at war). I passed him the suggestion to use BT's on their destroyers. He told me that he would send it to London to the Admiralty with a strong recommendation, but warned that it might "just go into the 'lion's maw' and you'll hear nothing more about it!" Fortunately, this did not happen—thanks to Columbus' persistence. Without his foresight, the BT might never have been used in World War II and would not have had the impact on oceanography in general that continued after the war.

Athelstan Spilhaus
Washington, D.C.

Underwater Acoustics

IT was through my interest in underwater acoustics that I first became aware of Columbus' contributions in this area of the broad field of oceanography. His outstanding theoretical and, later, practical studies as related to the effect of thermoclines on acoustical transmissions opened the doorway and made possible our present systems for detection and classification of underwater objects, thus greatly enhancing our nation's antisubmarine capabilities.

My contacts with Columbus broadened and became more personal through the early days of the Associates' program. Later, in the first years of my service to the Institution as chairman of the board, Columbus' understanding of the problems faced and his support were vital in the orderly growth and the present character and status of the Institution.

Noel B. McLean

New York

World War II at Woods Hole

IN 1940 when Iselin became Director of the Institution, the signs of a global war were ominous. The fact that the Institution acquired one of the earliest defence contracts under the newly-formed National Defense Research Council (NDRC) was indicative of Iselin's leadership, sense of patriotism, and involvement.

Iselin's personal contacts and ability to synthesize the advice from his many friends were particularly important in those days when he transformed the Institution from basically a summer organization into a year-round laboratory. One of his neighbors on Martha's Vineyard was Dr. Frank Jewett of the Bell Telephone Laboratories who was involved in preparing the nation's scientists for war-time problems. Jewett's wise, and probably somewhat fatherly, counsel convinced young Iselin that his primary responsibility was not to join the Navy and run ships like so many of his friends and classmates were doing but rather to run a laboratory to help solve the Navy's broader problems.

A close contemporary friend of Iselin's was the geophysicist Maurice Ewing who had been doing acoustical work on the 'Atlantis.' These two scientists believed that by sharing their widely different technical backgrounds they could learn more about the principles of submarine hunting, as effected by the ocean. Thus, the Institution's wartime efforts were started with a rather small group of biologists and

physical oceanographers already at Woods Hole plus some newly imported physicists and electronics specialists. During the next five years the influx of people steadily increased. Even when the Institution grew to include several hundred people, Columbus remained personally and technically involved in individual problems to an amazing extent. He spent a great deal of time wandering around the lab, quietly observing, gently encouraging, and posing questions so pertinent that they frequently suggested solutions.

To list all the problems tackled during the war years would be too lengthy but some of the major ones were:

- performance of anti-fouling paints.
- current and drift predictions for downed aviators on life rafts.
- prediction of wind-shear and inversion layers on smoke screens.
- burying and countermining in mine warfare.
- wake suppression for landing craft.
- wave and swell predictions for amphibious landings.
- development and application of underwater explosives.
- submarine diving problems.
- transmission of sound in the sea.
- convoy-routing.

- discouragement of sharks.
- underwater photography.
- writing of manuals to instruct Navy people of all ranks how knowledge of the ocean might improve their situation.

Medal of Merit

For his leadership during the war Iselin was given the Medal of Merit in 1948, the highest U.S. civilian award. The citation read:

Dr. Columbus O'Donnell Iselin, for exceptionally meritorious conduct in the performance of outstanding services to the United States from 1940 to 1946. Dr. Iselin, Director of the Oceanographic Institution at Woods Hole, Massachusetts, because of his prudent foresight and technical and scientific skill made a valuable contribution in the development and perfection of the bathythermograph and other instruments which saved a large number of our ships during the war. Dr. Iselin's vision which led him to pioneer in a new field of scientific research, his technical and analytical knowledge, proved to be invaluable contributions to the war effort of the United States.

Signed at the White House

Harry S. Truman

A second important phase of Iselin's Navy interests started after the war when he was asked to serve on the newly formed Committee of Undersea Warfare of the National Academy of Sciences. He was active in this Committee for the remainder of his life. Iselin's contributions in this group of scientists, engineers, and educators were partly as a globally oriented marine scientist and partly as an experienced sailor. Not only the experience of his ocean travel but his daily runs from the Vineyard to Woods Hole in his boat 'Risk' gave Iselin a seagoing character and philosophy that was recognized and respected by Navy personnel of all ranks.

While the above list of problems might make good chapter headings for a resumé of the wartime interests of Iselin and Woods Hole, the essence of such chapters would be about the wide variety of people

he assembled or that were sent to him on a permanent or transient basis. Certainly one chapter would be devoted to how he devised and led a system that made chaos a little less chaotic, rules of thumb a little more rigorous and jury-rig experiments a little faster and more pertinent. Teamwork was prevalent in most laboratories and organizations during those war years but it seemed exceptionally pronounced at Woods Hole. Also unlike most laboratory directors, Iselin had the problem of making sailors out of a great conglomerate of land-lubbers.

Columbus' Right Arm

Any portrait of Iselin at Woods Hole without mentioning John Churchill would be deficient. John was a classmate and shipmate of long standing, and in the "Log of the Schooner 'Chance'" was called "that hard boiled engineer." By profession he was an architect, but his heart was on the water, and his mode of thinking and action were obviously in line with Columbus'. As a result, Columbus had an executive who also believed in shoving great responsibility on individual scientists and workers, but who was quite capable of making major decisions, skippering the ships and arbitrating disputes in a way that was more likely to leave the participants laughing than mad.

Allyn C. Vine

The Falmouth Enterprise reported:

This interview with Mr. Iselin received prompt clearance from the Office of Censorship and was published on the first page of The Enterprise on August 4, 1944. The story filled six columns of newspaper space. For the first time and one of the few times Falmouth people learned something of the war effort in which they lived.

For Director Iselin it was possible to satisfy public interest without alerting the enemy. The incident is unusual because it is not usual for men in Director Iselin's position to be concerned with public interest and the people's right to information.

Columbus O'Donnell Iselin was a man of science and an individual of rare common sense.



Watching the builders' trial of the 'Atlantis' off Copenhagen in 1931 are Columbus Iselin at left and the designers Prof. George Owen and Mr. Francis Minot in caps.

Maybe you ought to teach me . . .

I BECAME interested in physical oceanography late in my career as a graduate student of theoretical physics at Harvard. As a typical student of my times I was well versed in quantum field theory and high energy nuclear physics, ignorant of classical physics, and unaware of the existence of oceanographic science. My contact with Columbus Iselin was not intimate, but his influence upon me and my career was profound. He educated me with wisdom and sensitivity and initiated me to the realities of the sea.

My curiosity having been aroused by the reading of a mathematical paper which mentioned the oceans, I impulsively found "Oceanography" in the Harvard catalogue and knocked on the door of Professor Iselin's office in the Museum of Comparative Zoology. By coincidence, it was the only half-day that semester that Columbus was spending at Harvard. I asked him to give me a reading course the next term. He inquired into my background, muttered "maybe you ought to teach me" and agreed to do so. Two months later when I showed up at the ap-

pointed time to start, he exclaimed "I never thought I'd see you again." One of the first parables he related to me concerned the frustration and retreat of an eminent Harvard physicist who had crossed Oxford Street to solve the problems of the ocean.

Under Columbus' guidance I first read Proudman's "Dynamical Oceanography," then Brunt's "Physical and Dynamical Meteorology" and Jefferies "The Earth," tackled "Lamb" and delved into the modern literature. We met once a week in the only room of the MCZ where smoking was permitted, exchanged brief comments on references and questions, and then settled down to a long session of anecdotal oceanography. That summer Columbus brought me to Woods Hole and introduced me into the intensely stimulating theoretical group centered about Malkus, Stommel, and Veronis that had formed during his Directorship of the Institution.

Allan R. Robinson
Cambridge, Mass.

. . . help me persuade Henry Bigelow
to write a book on waves



IN the winter of 1944 I was dispatched to Woods Hole to learn something about amphibious landings. Working under George Clarke, my immediate task was to build an instrument to record wave action on landing beaches. Columbus would walk through the laboratory each morning and look over our shoulder, normally without saying anything. One day he remarked, "I think it would be a good idea if you had a look at what Maurice is doing." It turned out that Maurice Ewing was building a reference pressure volume connected to the outside by capillary leak, so that the reference pressure represented a time average over the last half hour or so. It was just what we needed for what today would be called a "high-pass filter." The instrument turned out to be quite successful, and served as a standard for many years.

Later that winter Columbus came by and said, "Would you help me persuade Henry Bigelow to write a book on waves?" This request was very flattering to a green oceanographer. Evidently someone in the U.S. Naval Hydrographic Office had talked to Columbus about the need to put between two covers a technically sound account of what was known about ocean waves, written in a language that would make sense to a seafaring man. Columbus had decided that Bigelow was the man for the job. We took the Cape Cod Express

and then jumped a taxi to Cambridge. The mission was not unsuccessful*.

Next spring I was extended the hospitality of staying at the Iselin farm on the Vineyard. There Columbus pointed with pride to his accomplishment as a carpenter. In the evenings he would tell about ships and the sea, and of the close friends the Iselins had lost in certain naval actions. Thirty years have passed, and I vividly remember the great warmth of this island haven.

It was clear that Columbus had become totally committed to the war effort, as an oceanographer and as a director. I think it was he who first identified the "afternoon effect" (loss in the range of underwater sound) with a diurnal warming of the surface waters. He made many other contributions, few of them credited to him. He chose to do his work through a devoted, colorful (if somewhat unlikely) group of disciples: Fuglister, Worthington, Vine, Schevill. . . After the war he never quite regained the taste for personal scholarship. A selfless man whom I miss greatly.

Walter H. Munk
San Diego, California

*Bigelow, H. B. and Edmondson, W. T. (1947), Wind waves at sea, breakers and surf. U.S. Navy Hydrogr. Office Pub. 602, xii plus 177 pp., 57 text figs., 24 pls. (Also translated into Russian in 1951 by B. B. Shtokgana).

Mood of excitement

WHEN I walked into Columbus' office thirty years ago he had my letter, asking for a job on his desk. He glanced at it for a few seconds and said: "The 'Atlantis' is at sea right now; you will be going on her next cruise. Why don't you read this while you wait?" He handed me a copy of a paper called "Sound Transmission in Sea Water" and I was hired as a bathythermograph observer at \$1200.00 per annum.

Ten years later Columbus was having coffee with us in Fritz Fuglister's office one afternoon and he said: "Can anybody use the 'Atlantis' next month?" I stuck up my hand and she was mine; it was my first independent effort as an oceanographer. Sometimes I think that Columbus' method of picking oceanographers in those days could be compared to throwing people into the ocean and seeing whether or not they could swim, but I am the last man to complain about it. I owe my career to my ten year apprenticeship under Columbus Iselin and the group of oceanographers which he led.

Columbus' leadership was pretty informal but it was most real. He had the habit of dropping in on everybody in the Institution from time to time because he was interested in everything that was going on. He was able, without saying anything in particular, to show people that he liked what they were doing and that he thought it was good for oceanography. I believe that this enormous, personal encouragement was felt, at one time or another, by every man and women who worked at the Institution under his directorship.

No student of the North Atlantic can function without Columbus' two great treatises within easy reach; one on the general circulation and the other on variations in the strength of the Gulf Stream. To me, though, his finest work was a four page paper on the relative importance of vertical and lateral mixing published in 1939. He once told me that it only took him two or three days to write, but that paper changed the whole concept of water mass formation in the oceans.

Oceanography is much more highly organized nowadays, and a great deal better paid than it was then but I do not think it is as much fun. Of course, most of us who worked for Columbus in our youth are fat and middle aged now and that may have something to do with it, but I believe that the mood of excitement and enjoyment in the ocean which prevailed in those days was largely due to him.

L. V. Worthington

Woods Hole, Massachusetts

Nothing was too small for him

DURING the pre-Christmas season of 1945 the Institution was swarming with Navy officers, Washington VIPs, foreign Allied VIPs, plus quantities of mail, red tape, expanding contracts, problems, and people. All this rested on Columbus' broad shoulders. All this was tightly locked into the well secured, guarded "Old Building." The first floor had a section called "the cage"; this section was wired with an alarm system connected with the Marines on guard at the adjoining Navy base. Columbus and Dr. Redfield and the submarine warfare staff worked in this area.

I was fortunate in being in this group. I had been to Falmouth at lunch time and

bought a doll for a Christmas gift. It was a doll with a definite personality and made by a well known, reputable doll manufacturer. I was delighted to find such a treasure in the local store and was showing my great coup when Columbus appeared with as much appreciation of this little doll as I had. He smiled and chuckled at it and said he was going right over to Falmouth and buy one. I offered to do this for him but he seemed to want the fun of doing it himself.

His character was so big that no person or no thing was too small for him to appreciate.

Dorothy Ryder
Cambridge, Mass.

COLUMBUS did play an important part in my life during the time I was President of the Travelers Research Center in Hartford, Connecticut, 1963-69. He was a member of my Board of Directors and on the Board's Science Advisory Committee. Although his health was obviously of concern during most of this period, he was both conscientious and effective in his participation in Board and Committee meetings. He was unfailingly wise and perceptive in his advice to me, and the quality of his thinking was combined with a grace and personal sensitivity that made even criticism constructive. Criticism was not his usual mode of address, however. Normally, his contributions were made in the more positive form of suggested approaches to problem resolution, mention of new opportunities for research, and comments calling attention to the most promising features in our work or plans. This kind of gentle, positive reinforcement exerted great influence on me and my colleagues.

Columbus combined the qualities of professional leadership and advisor with those of friendship in an extraordinarily attractive way. The pleasure these memories provide compensates in part for the hole left by his passing.

Douglas L. Brooks
Hartford, Conn.

Be the fellow to answer questions

IN 1939, George Woolard and I were measuring gravity beside the old Penzance garage, where the Smith building stands. Columbus paused on his way for a chat. I do not remember what any of us said, but a strong impression was left with me that here was a most significant man.

In January 1946 I had decided to look into oceanography as a peacetime pursuit. Columbus had apparently made up his mind, before the interview, that he would hire me because he proposed that I come to Woods Hole and make myself into the fellow who could answer questions the Navy might ask about underwater acoustics. This is no quotation, but I am sure many readers will recognize it as just about what Columbus might have said. Although my scientific interests are far from limited to underwater acoustics, this

IN 1954 I retired from active business and made my permanent residence at West Chop, Vineyard Haven. From time to time I would meet Columbus Iselin on Main Street and we would exchange pleasantries. Once he said to me, "You seem to be spending a great deal of time here on Martha's Vineyard." I said, "I have decided to retire here." He said, "That is most interesting; we need more people over to help us at the Institution."

I received a call from Woods Hole inviting me to become a member of the Corporation which I promptly accepted, although feeling totally unqualified. Whether it is true or not, I somehow detected the fine Italian hand of Columbus Iselin inviting me to join.

I might quote from my 35th Anniversary report of the class of 1925 Harvard. "My principal change in status since the last class report, other than becoming a grandfather at long last, was my recent election as a Member of the Corporation of the Woods Hole Oceanographic Institution. Now I am in really deep water."

The deep water, however, has, down through the years, drawn me closer and closer to Columbus Iselin, cemented our friendship, taught me more about the unlimited horizon of our oceans, and brought me to say goodbye and a job well done!

Edward M. Douglas
Vineyard Haven, Mass.

simple suggestion describes much of my professional life since that time.

My relations with Columbus have been an important and influential part of my professional life. No matter what the occasion, I have always felt and frequently made use of the impulse to ask his advice. This has to be, I think, because many of us on the early post-war Institution staff knew that his advice would be sound and would reveal the fundamentals of the problem we were facing in ways that we had not been sensitive to. This, after all, is exactly what one hopes for in good advice.

Like a host of other people, I have enjoyed his friendship and his wonderful humor. He is certainly a man who continues to be part of all of us.

J. Brackett Hersey
Washington, D.C.



Mrs. C. O. Iselin Dies Shortly After Husband

Mrs. Eleanor Lapsley Iselin, widow of the oceanographer, Dr. Columbus O. Iselin of Vineyard Haven, died unexpectedly at her home on Monday, following her famous husband in death within less than two weeks. Dr. Iselin died on Jan. 5.

Mrs. Iselin was 63 years old, a native of New Rochelle, N. Y., but for 37 years she and her husband had made their home on their farm at Chappaquansett in Tisbury.

Before she met Dr. Iselin in 1927, she had studied in Paris and worked in New York as a medical secretary. With her sisters, Katherine, Elizabeth and Jane, she was noted for her horsemanship, and a New Yorker cartoon once showed the three Lapsley girls tumbling from their horses while their dogs looked on, surprised.

All her life a devoted horsewoman, before her marriage, she had schooled hunters in Westchester County. It was Mrs. Iselin who saw to it, once the family had moved to the Island from Milton, that there were horses on the farm. At first, these were hunters; then she bought a large jumper; then Arabs struck her fancy, for, being smaller horses they seemed more suitable for the Iselin children.

One Christmas, she bought a male Mexican burro, St. Bernard-sized at the time of the purchase, and brought it to the Island in the back of the family car. It was not long before Mrs. Iselin feared it would be lonely and purchase a mate, and the pair, who became beloved pets, were

so completely at home that they would wander in and out of the Chappaquansett kitchen begging for tidbits.

A warm, outgoing woman with a highly developed sense of humor, Mrs. Iselin delighted her friends with her stories—among them the tale of how, only days before her marriage, she had fallen off a horse into a brier patch and her face had been so badly scratched that she wondered if her husband-to-be would want to go through with the ceremony.

During World War II, Mrs. Iselin was active in war work of all sorts, and her energy and efficiency in efforts for the Red Cross were admired by all who knew her. At that time, too, she started what was called the "Ship's Bell School" in the barn in back of the Iselin house, and there, a young English refugee, the Iselin children and several Island neighbors studied. Two other youngsters whom she virtually adopted were Mavis and Carol Randolph, whose aunt, Miss Alice Warring, was her cook for 30 years. Household help always stayed long with Mrs. Iselin. For decades, Miss Martha Caughey was the family nurse.

Surviving are two sons, Columbus O. Iselin Jr. of Dover and Sgt. Thomas Iselin of Fort Devins, and three daughters, Miss Eleanor E. Iselin of Boston, Mass. Mrs. Marie Doebler of Naples, Italy, and Miss Victoria Iselin of Cambridge. There are also six grandchildren.

Surviving her, also, are two sisters, Mrs. Mott B. Schmidt of Katonah, N. Y., and Mrs. John Hallowell of Cambridge.

Reprinted from—
Vineyard Gazette—1/22/71
Martha's Vineyard

In addition he was the author of numerous popular articles and technical reports. His many speeches, carefully written in longhand are a source of much historical value.

Bibliography of COLUMBUS O'DONNELL ISELIN

- 1930. Recent work on the dynamic oceanography of the North Atlantic. *Trans. Amer. Geophys. Union*, 10th Ann. Meet.: 82-89.
- 1930. A report on the coastal waters of Labrador, based on explorations of the "Chance" during the summer of 1926. *Proc. Amer. Acad. Arts Sci.*, 66(1): 1-37.
- 1933. The development of our conception of the Gulf Stream system. *Trans. Amer. Geophys. Union*, 14th Ann. Meet.: 226-231.
- 1933. Some phases of modern deep-sea oceanography with a description of some of the equipment and methods of the newly formed Woods Hole Oceanographic Institution. *Smithsonian Inst., Ann. Rept.* for year ending June 30, 1932 (*Publ. 3198*): 251-267.
- 1934. Temperature-salinity correlation within the Florida Current. *Trans. Amer. Geophys. Union*, 15th Ann. Meet.: 208-209.
- 1936. A study of the circulation of the western North Atlantic. *Papers in Physical Oceanography and Meteorology*, 4(4): 1-101.
- 1936. The influence of the Mediterranean outflow at mid-depths in the Sargasso Sea. *Trans. Amer. Geophys. Union*, 17th Ann. Meet.: 219-221.
- 1937. The new plans for the cooperative investigation of the North Atlantic circulation. *Trans. Amer. Geophys. Union*, 18th Ann. Meet.: 222-223.
- 1938. The influence of fluctuations in the major ocean current on the climate and fisheries. *Collecting Net*, 13(7): 1-4.
- 1938. Problems in the oceanography of the North Atlantic. *Nature*, 141(3574): 772-776.
- 1938. A promising theory concerning the causes and results of long-period variations in the strength of the Gulf Stream system. *Trans. Amer. Geophys. Union*, 19th Ann. Meet.: 243-244.
- 1939. The influence of vertical and lateral turbulence on the characteristics of the waters at mid-depths. *Trans. Amer. Geophys. Union*, 1939: 414-417.
- 1939. Some physical factors which may influence the productivity of New England's coastal waters. *J. Mar. Res.*, 2(1): 74-85.
- 1940. Preliminary report on long-period variations in the transport of the Gulf Stream system. *Papers in Physical Oceanography and Meteorology*, 8(1): 40 pp.
- 1940. The necessity of a new approach to the study of the circulation on the continental shelf. *Trans. Amer. Geophys. Union*, 1940: 347-348.
- 1942. Interaction between the hydrosphere and the atmosphere. *Trans. New York Acad. Sci.*, (2), 4(3): 99-106.



1947. Preliminary report on long-period variations in the transport of the Gulf Stream system. *Int. Hydrogr. Rev.*, 24: 92-94. [Extract from: *Pap. Phys. Oceanogr., Meteorol.*, 8(1)].

1948 and F. C. Fuglister. Some recent developments in the study of the Gulf Stream. *J. Mar. Res.*, 7(3): 317-329.

1949. Principal instrumentation problems of deep-sea oceanographic exploration. *Instruments*, 22(10): 898-901.

1950. Some common characteristics of the Gulf Stream and the atmospheric jet stream. *Trans. New York Acad. Sci.*, (2) 13(2): 84-86.

1952. The Gulf Stream system. *Proc. Amer. Phil. Soc.*, 96(6): 660-662.

1955. Recent advances in our understanding of the circulation problem and their implications. *J. Mar. Res.*, 14(4): 315-322.

1955. Oceanographic problems of the Arctic Ocean. *Arctic*, 7(3/4): 195-198.

1955. Coastal currents and fisheries. *Pap. Mar. Biol. and Oceanogr., Deep-Sea Res., Suppl.* 3: 474-478.

1956. We hope to witness the start of a hurricane. *Oceanus*, 4(3): 3-7.

1957. Matthew Fontaine Maury (1806-1873) "Pathfinder of the Seas," the development of oceanography. *Newcomen Publ. in N. Amer.*, Princeton Univ. Press. 8-26.

1957. Synoptic studies in oceanography. *Oceanus*, 5(3/4). 3-12.

1958. Synoptic studies in oceanography. *Geophys. Monogr.*, 2: 169-174.

1959. The basic thermal structure of the oceans. In: *Environmental factors influencing the performance of naval weapons systems*, W. H. O. I., Pt. I: 9-22. (Unpublished manuscript.)

1959. New discovery in physical oceanography. *Oceanus*, 6(2): 11-12.

1960. The World Ocean. *Oceanus*, 6(3): 5-6.

1959. Use of the ocean. (Editorial. Based on remarks at the concluding session of the First International Oceanographic Congress). *Science*, 130(3380): 895.

1961. An interpretation of the deep current measurements. *Oceanus*, 7(3): 9.

1962. Inshore fisheries management. *Oceanus*, (3): 2-6.

1962. Oceanography, 1962. *Navigation*, 9(3): 182-184.

1963. Improving world fisheries. 2. The oceanographer's viewpoint. Special Issue on Marine Biology, *AIBS Bull.*, 13(5): 69-70.

1963. The loss of the THRESHER. *Oceanus*, 10(1): 4-6.

1964. From Cape Town to Woods Hole. *Oceanus*, 10(3): 11-12.

1964. Oceanographic forecasts. *Oceanus*, 10(4): 8-13.

1969. (with K.O. Emery) Human Food from the Ocean. *Science*, 157(3894): 1279-1281.

Contents

AN APPRECIATION by J. N. Corruthers	3
BIBLIOGRAPHY OF COLUMBUS O'DONNELL ISELIN	48
IN MEMORIAM—MRS. C. O'D. ISELIN	47

Contributors

<i>Arnold B. Arons</i>	37	<i>Hilary B. Moore</i>	12
<i>Douglas L. Brooks</i>	46	<i>George L. Moses</i>	17
<i>Dean F. Bumpus</i>	22	<i>Walter H. Munk</i>	44
<i>Harold L. Burstyn</i>	38	<i>Robert Munns</i>	9
<i>Wm. S. Butcher</i>	23	<i>Jerome Namias</i>	32
<i>Joseph Chase</i>	7	<i>John Parkinson Jr.</i>	30
<i>George L. Clarke</i>	24	<i>E. R. Piore</i>	19
<i>Edward M. Douglas</i>	46	<i>Stanley E. Poole</i>	26
<i>Gunther Dietrich</i>	12	<i>Roger Revelle</i>	8
<i>Maurice Ewing</i>	14	<i>Allan R. Robinson</i>	43
<i>Charles J. Fish</i>	32	<i>Lester Rosenblatt</i>	35
<i>Hollis S. French</i>	22	<i>Francis C. Ryder</i>	6
<i>F. C. Fuglister</i>	36	<i>Dorothy Ryder</i>	45
<i>Paul M. Fye</i>	1	<i>Mrs. Mott B. Schmidt</i>	18
<i>Richard Haedrich</i>	35	<i>Robert R. Shrock</i>	34
<i>Kaleroy L. Hatzikon</i>	13	<i>Joanne Simpson</i>	16
<i>J. Brackett Hersey</i>	46	<i>F. G. Walton Smith</i>	33
<i>Ilmo Hela</i>	9	<i>Athelstan Spilhaus</i>	40
<i>Koji Hidaka</i>	22	<i>Raymond Stevens</i>	29
<i>A. G. Huntsman</i>	23	<i>Harris B. Stewart Jr.</i>	35
<i>Lewis Iselin</i>	28	<i>Richard C. Vetter</i>	33
<i>Sally Iselin</i>	29	<i>Allyn C. Vine</i>	19 and 41
<i>John A. Knauss</i>	38	<i>Charles M. Weiss</i>	27
<i>Richard G. Leahy</i>	27	<i>George W. Wood</i>	20
<i>Gordon Lill</i>	12	<i>Warren S. Wooster</i>	35
<i>Noel B. McLean</i>	41	<i>L. V. Worthington</i>	45
<i>Daniel Merriman</i>	10		

Published by the

WOODS HOLE OCEANOGRAPHIC INSTITUTION
WOODS HOLE, MASSACHUSETTS